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Dr. B. P. Sinha, M.A., Ph.D. (London),  
University Prof. & Head of the Department of  
Ancient Indian History & Archaeology,  
Patna University, Patna.

PATNA - 5  
The 29th May 1968.

Dear Sir,

I am herewith sending to you copy of papers received  
and read at the Seminar on Potteries of Ancient India held  
in the Patna University from 10th April to 13th April 1968.  
I hope you will ~~and~~ find the papers useful and stimulating.  
Your comments if any will be welcomed. We are proposing to  
publish the proceeding of the seminar soon. Any suggestions  
for making the volume more useful and attractive will be  
appreciated.

With kindest regards,

Yours sincerely,

*B. P. Sinha*  
( B. P. Sinha )



To

Sri B. N. Puri,  
Professor of Ancient India in History & Culture  
National Academy of Administration  
Mussoorie (U.P.)







LIST OF ARTICLES PRESENTED IN THE SEMINAR: (ENCLOSED)

1. Sri B.B.Lal, Director General - Inaugural Address.
2. Dr. B. P. Sinha, Head of the - Welcome Address.  
Department of A.I.H. & Arch, P.U.
3. Sri M. N. Dashpande, Joint  
Director General, A.S. of India. - **Raman Pottery in India.**
4. Sri Krishna Dev, - Problem of the Ochre  
Superintending Archaeologist. Coloured Pottery.
5. Sri S. R. Rao,  
Superintending Archaeologist. - The Harappan Ceramic Wares  
and The Devolution of The  
Harappa Culture.
6. Sri B. B. Lal,  
Chief Archaeological Chemist. - Geochronological Investi-  
gations of the Ochre Col-  
oured Pottery.
7. Dr. S.P. Srivastva, - Rajasthan' Post-Harappan  
Director, State Archaeology & Pottery.  
Museum, Rajasthan.
8. Dr. T.V. Mahalingam, M.A., D.Litt., - South Indian Pottery upto  
Prof. of A.I. History & Arch, 500 A.D.  
University of Madras.
9. Sri M. D. Khare, - Study of Pottery - A New  
Archaeological Survey of India. Approach.
10. Sri Radhakrishna Chowdhary,  
Vice-Principal, G.D. College, - Pottery and the Study of  
Begusari, (Bihar). Culture-Sequence.
11. Sri. K.V. Soundara Rajan, - The Devolution of the  
Superintending Archaeologist, Peninsular 'Neolithic'  
Madras. Culture.
12. Sri R. D. C. Agrawala, Keeper, - Early Historic Pottery  
National Museum, Delhi. Handles with Human Figuri-  
nes.
13. Prof. K.D. Bajpai, - Chalcolithic Pottery of  
University of Saugar. Eastern Malwa.
14. Sri S. P. Gupta, National - Sociology of Pottery:  
Museum, New Delhi. Chirag Dilli, A Case Study.
15. Sri K. N. Dikshit, - Nature of Harappan Wares  
Archaeological Survey of India. in Sutlej Valley.
16. Sri K. N. Dikshit, - The Note of the Problem of  
the Plain Black-and-Red  
Ware in Northern India.
17. Sri Ballabh Saran, - ~~Text~~ Technology of the  
Superintending Archaeologist, Painted Grey Ware.  
Mid-Eastern Circle, Patna.
18. Dr. Madan Mohan Singh, Reader, - Dish-on-Stand.  
Dept. of A.I.H. & Arch, P.U., Patna.
19. Dr. Bhagwant Sahai, Lecturer, - Paintings of the Post-  
Dept. of A.I.H. & Arch, P.U., Patna. Harappan Chalcolithic Pott-  
eries.
20. Dr. R.C.P. Singh, Field Director, - Spouted Vessels ~~of~~ in India  
Dept. of A.I.H. & Arch, P.U., Patna.



21. Dr. M.S. Pandey, Lecturer, - Potteries in the Brah-  
Dept. of A.I.H.&Arch, P.U. Patna. ical Literature.
22. Dr. Sushil Malti Devi, Lecturer, - Potters & Potteries in  
Dept. of A.I.H.&Arch, P.U. Ancient Indian Inscrip-  
tion.
23. Dr. Brajdeo Pd. Roy, Lecturer, - Literary References to  
Dept. of A.I.H.&Arch, P.U. Pottery.
24. Dr. S. N. Sahay, Curator, - Origin & Spread of the  
Dept. of A.I.H.&Arch, P.U. Northern Black Polished  
Ware.
25. Sri Naseem Akhtar, - Associated Antiquities  
Research Assistant, Dept, of with the Black & Red  
A.I.H.&Arch, P.U., Patna- Ware Culture.
26. Dr. Sita Ram Roy, - The Northern Black Poli-  
Directorate of State Archaeology shed Ware in Bihar.  
& Museum, Bihar.
27. Dr. B. S. Verma, Directorate of - Black-and-Red Ware in  
State Archaeology & Museums, Bihar. Bihar.
28. Sri Lala Aditya Narain, - Associated Antiquities of  
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29. Sri Sivaji Singh, Lecturer, - Vedic Literature on  
Corakhpur University. Pottery.
30. Dr. K. K. Sinha, Reader, - The NBP Ware - Fresh  
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31. Sri H.C. Bhardwaj, Lecturer, - Some Technical Observations  
Banaras Hindu University. on N.B.P. Slip.
32. Sri Purshottar Singh, Lecturer, - The Problem of Black-and-  
Banaras Hindu University. Red Ware in Indian Arch-  
aeology.
33. Srimati Vibha Tripathi, - Pre-Harappan Painted  
Research Fellow, B-H-U. Pottery Culture - A Study  
in Socio-Economical  
Factors.
34. Sri V. D. Mishra, Lecturer, - Pottery of Kausambi.  
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Allahabad University.
35. Archaeological Activities in Bihar - A Review - by Dr.B.P.  
Sinha, University Prof. & Head of the Department of Ancient  
Indian History & Archaeology, Patna University, Patna.



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## INAUGURAL ADDRESS

by

Sri B. B. Lal  
Director General,  
Archaeological Survey of India,  
New Delhi.



MEMORANDUM

TO :

BY :

Director General,  
Archaeological Survey,  
New Delhi.



Mr. Vice-Chancellor, ladies and gentlemen,

I have indeed no words to express my deep sense of gratitude to the Patna University and in particular to Professor K.K. Datta and Dr. B. P. Sinha for asking me to inaugurate the seminar on Pottery in Ancient India. This<sup>is</sup> indeed a greatness thrust upon me, for I know full well that there are many distinguished colleagues in the gathering here who know much more about pottery than I do. Anyway, it was the behest of these two professors that I must do the ritual of inauguration and here I am for the purpose.

I suppose I would be forgiven by my colleagues and co-workers in field-archaeology if I withdrew for a while from them and first addressed my other friends present here. For, more than any thing else, it is their sympathy and subsequent co-operation that I would like to enlist. No doubt, the fact that they are present amongst us shows their interest in the subject, but it should, I suppose, be our effort to make them interested further and further so that they may be so filled with enthusiasm for the subject that they may, on their own volition tell those they meet hereafter that we, who are dubbed as "potsherd-hunters", are not really wasting our time and energy and the nation's money in chase of broken fragments of pottery discarded long long ago and mostly forming parts of rubbish heaps.

The pottery, like any other source-material known to historians, throws light on almost every aspect of the past-social, cultural religious, economic, political and what not! In fact, I might go even a step further and declare that in recent years pottery has helped us even in solving riddles which other sources just could not. I shall substantiate these statements with a few examples.

Amidst the pottery found in the excavations at Arikamedu, near Pondicherry in south India, there were two varie-



varieties which call for special attention. One of them is Arretine. It is known to have been produced in <sup>Italy</sup> ~~Italy~~ at a place called ~~Arezzo~~, from the Latin equivalent of which, Arretium, it derived the name. This pottery originated some time in the first century B.C. and was driven out of the market by its rival potteries about the middle of the first century A.D. Its occurrence at Arikamedu, therefore, not only proves a trade-~~contract~~ between Rome and India but also pin-points it in time : it could not have been later than A.D. 50 - by which date the manufacturing itself of the Arretine had ceased. Such a precise dating is not possible sometimes even with the help of coins, as these can continue to be treasured for a couple of centuries after the concerned king or queen has ceased to rule - did not we have had in our houses the coins of Queen Victoria until the other day ? But an earthen pot, being breakable, would not normally be in use beyond a few years of its manufacture. Hence the advantage of a closely-dated pottery over even coins. The Arretine Ware also confirms the historical indication that Roman trade with the East was in all likelihood the result of the unification of the Western World under Augustus who ruled between 23 B.C. and A.D. 14.

The Tamil literature of the early centuries of the Christian era makes a reference to the importation of Roman wine into India. Now while literature gave only an inkling which may or even may not have been believed - pottery has given it a concrete shape, namely how, when and what kind of wine was imported. At Arikamedu, already referred to, have been found tall conical jars with hafty handles, called the amphorae. These jars are known to have been used in Italy for the transportation and storage of wine. And lest there should remain any doubt <sup>about</sup> the fact that it was wine and



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nothing else that was imported in these vessels from Italy, the Chemical analysis of the incrustations on the inner walls of these vessels has proved the presence of resin, a prominent constituent of the Roman wines of the early centuries A.D.

The pottery may well be regarded amongst the most important keys in the bunch of the archaeologist for it has unlocked many a secret of the past, which would otherwise have remained unknown. For example, who could have imagined that some of the stories narrated in the Pancha-tantra are as old as four thousand years ? On a jar found at Lothal, the famous site of the Indus Valley Civilization in Gujarat, occurs a painting in which two birds are seen perched on a tree, each holding a fish in its beak. Below is an animal with a short thick tail, which Shri Rao, the excavator of Lothal, is inclined to identify as a fox. He also refers to the presence of a few fish on the ground. If this identification be correct, here we have the <sup>K</sup>ernel of the story of 'the cunning fox' who flattered the crow and managed to pinch away the morsel from its mouth.

The painted designs on the Harappan pottery include a variety of flora and fauna. While evidence in respect of the latter is also obtainable from the actual animal remains, the evidence regarding the former, viz. the flora, is not easily to be had from the material remains, except perhaps for the wood which may be identified through the charcoal. But I don't think there is any evidence other than that of the painted pottery to establish the plantation of the banana by the Harappans. On other aspects, too, of the life of the Harappans does the pottery throw singular light. For, what other evidence but the painting on a potsherd from Harappa



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is there to establish the use of the dhoti, the typical Indian lower garment, as far back ~~as~~ as the middle of the third millenium B.C.

It is a pity that the Harappan script has not been deciphered so far. But more pitiable than this was the fact that until a few years ago there was no agreement amongst scholars even on a basic point viz. whether the script was to be read from the right to the left or vice-versa. The excavation at Kalibangan in Rajasthan brought to light in 1961, amongst other inscribed pot-sherds, two specimens which helped solve the riddle. On these sherds there occur overlaps of the incised symbols and the incisions show that the symbols on the right were successively cut by those on the left. This proved beyond any shadow of doubt that the direction of writing in the Harappan script was from the right to the left. Has'nt the pottery scored over other ~~unrecorded~~ materials in this battle of wits ?

The pottery also throws indirect but much welcome light on the food-habits of the people. The thali that is a must in every household in northern India and can be seen as a proved possession of an uncouth labourer squatting on the pavements of Calcutta at once reminds one of its prototype found in the Painted Grey Ware complex at the beginning of the first millennium B.C. I would have no objection if ~~some~~ one further imagined the Painted Grey Ware people eating dāla-bhātā (lentil and rice) in these dishes just in the same way as our common folk do even to-day in Bihar or Uttar Pradesh. In fact, I should even place in one of the hands of the Painted Grey Ware person taking his or her meals the lota found at Rupar, which is, again, more or less similar to its present-day counter part in northern India. In this context it may well be affirmed that the shape of the modern Gujarati lota can boast of even a greater antiquity : its prototype has been found at Prakash in Khandesh in deposits CC-0. In Public Domain. UP State Museum, Hazratganj. Lucknow



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ascribable to the middle of the second millennium B.C.

Lest one should go away with the impression that the pottery is capable of throwing light only on an odd bit here another odd bit there, may I now refer to something which can definitely be regarded as of far-reaching significance. One is pained to find that in the third decade of Independence we have to plead for an emotional and cultural integration of India, as if it is something new, something that has to be imposed now. Such an exhortation has become necessary evidently because there is a tendency amongst certain class of people to over-emphasize regionalism even at the cost of nationalism. But let every Indian know that though there may have existed in the third-second millenic B.C. broad regional divisions in the pottery of the country, namely the Harappan black-on-red ware and its ramifications in the Indus valley and Gujarat, the Ochre Colour Ware in the Ganga Valley, the neolithic burnished grey ware in the south, at the beginning of the first millennium B.C. a great ceramic unity had begun to emerge, and by about the middle of that millennium there was a complete cultural integration of India. Did not Northern Black Polished Ware cover the entire length and breadth of the subcontinent from Charsada in West Pakistan in the north-west to <sup>A</sup> Amaravati in Andhar Pradesh in the South and to Tamruk in West Bengal on the east ? It was more than two thousand years ago that we, the sons and daughters of Mother India had learnt to eat from the same dishes and drink from the same cups. Then what is it that should separate us now ? Let us reflect coolly over things and learn the lesson that ancient Indian pottery has to teach us even in its muteness.

May I now have a few words with my professional colleagues and draw their pointed attention to some of the more important problems facing us in the field of ancient Indian pottery ?



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There is first of all the problem of the black-and-red ware - or, shall I say, wares ? Now, whereas there is no black-and-red ware in the Harappan context in the Indus Valley and Rajasthan, there does occur a black-and-red ware in the same context in Gujarat. Where from did the Gujarati Harappans pick it up ? Or, ~~xx~~ did they originate it ? This ware continues into the Late Harappan levels at Lothal (Lothal B) and becomes a dominant industry in the still later ramifications, viz. those of Rangpur IIC and III, when it also shows marked white-painted designs. But while a white-painted black-and-red ware does occur in the Banas valley of Rajasthan about the time of Lothal B and Rangpur IIC, there is not much similarity in the pot-forms of the two regions. Can we then conceive of the black-and-red ware technique having originated independently in the two regions ? Perhaps not. Again, we find the occurrence of a white-painted black-and-red ware as far east as Pandu-rajar-dhibi in West Bengal, towards the close of the second millennium B.C. wherefrom did it come ? From the Banas valley, through central India ? How did it penetrate into Bihar ? Through the Son valley ? Should not then the valleys radiating from the central Indian plateau be thoroughly explored for the purpose ? A plain black-and-red ware also occurs along side the Painted Grey Ware and continues up to the times of the Northern Black Polished Ware. What is the exact relationship between the black-and-red ware and the Painted Grey Ware ?

Looking southwards, Bahal and Tekwada in the Tapti basin have shown the existence of a white-painted black-and-red ware in a chalcolithic context. Some of these pots also bear graffiti which indubitably ~~the~~ tie them up with the megalithic black-and-red ware. What, then, is the real story of the black-and-red ware which ranged in time from the second half of the third millennium B.C. down to the beginning of the Chirsta~~x~~n era and which encompassed the whole country



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during a major part of the first millennium B.C. Does the ware represent a single culture, with evolutions and devolutions in point of time and space ? or is the similarity confined ~~xx~~ only to the technique of manufacturing, there being local adaptations by the concerned cultures ? Indeed, it is not high time that a thorough, analytic-cum-synthetic, study was made of this ware ?

Then there is the problem of the Ochre Colour ware. Is it late Harappan ? Or, is it an altogether different industry dominating the Gangā Valley, there being, however, interactions between this ware and the Harappan ? There is another and I dare ~~to~~ say a no less important aspect of the problem of the Ochre colour ware. At a number of places for example Bahadarabad, Nasirpur, Jhijnjhana, Hastinapura, Noh, Ahichchhatra, Atranji-Khera, etc., this ware has been noticed to occur sporadically in a matrix of otherwise clean earth which imperceptively merges into the natural soil. Indications are that these deposits are water-lain. Are we then faced here with a huge deluge covering hundreds of miles of the Ganga-Yamuna basin ? Chronologically, this deluge may have to be placed some time about the middle of the second millennium B.C. Again, though there is a strong circumstantial evidence that this ware was associated with the ~~copper~~ with the copper Hoards, unimpeachable evidence has yet to come.

There are two other noteworthy aspects of our studies in ceramics. In the first place, detailed technological studies, supplemented with actual experiment in re-production, ought to be made of the various kinds of pottery. No doubt some thing has been done in respect of the Northern Black Polished Ware, but the truth is still far from the sight. Should not one also contact the local potters in eastern Uttar Pradesh and Western Bihar who still manufacture a pottery not very dissimilar to the Northern Black Polished Ware ? Another question. Is the black-



black-and-red effect in pottery always the result of inverted firing ? For example, in the megalithic black-and-red ware the inferior as well as the portion near the rim on the exterior are black and the lower exterior are red, the same is not the case in certain grey-and-red ware dishes of the north. In these the interior is grey or greyish black but on the exterior the rim-portion is red and the base grey or greyish black. Is the latter variety the result of what is known as 'sagger-firing' ?

In the context<sup>of</sup> technological studies, the archaeologist has to extend his begging bowl before the specialists in natural sciences, for who else but the chemist could identify the resin in the incrustations on the Roman amphorae or who else but the botanist could point to the existence of rice in the Harappan context at Lothal, by identifying the husk use as a degraisant in the pottery as that of paddy ? I am sure it is in the very nature of the natural scientist to extend their cooperation to the needy.

The other aspect I had in mind was the correlation of the ceramic evidence with that from the literature. I am sure there are words in the various ancient texts - Brahmanical, Jain and Buddhist - referring to many of the pottery-forms we have encountered in our excavations. Is it not meet that the two types of evidence were duly correlated ? God willing the efforts may more than amply ~~xx~~ be rewarded. For, this correlation might give a clue to the vexing problem of the Indo-Aryans. I know that some efforts, deserving praise, have been made in this direction but these have not touched even the fringe of the problem. Much more concerted efforts are needed.

Lastly, I would plead for the fulfilment of two great needs. One primarily concerning the student of pottery and the other the student as well as the layman. The former need



relates to the preparation of a comprehensive corpus of pottery. In the process of preparation the lacuna in our knowledge will also be highlighted, and this would whip us up into greater activity. For example, very little is known of the pottery used during the time of Harsha or thereafter up to the Muslim conquest. In the south there are many more gaps. The corpus will also force on us the adoption of a common terminology, particularly in respect of the description of the shapes.

The other needs relates to the establishment of a museum where the visitor may have a complete picture of Indian pottery from the third millennium B.C. down to almost recent times. No doubt the Archaeological Survey of India does have a collection of pottery in one of the Baradaris of the Tomb of Safdarganj at Delhi. But it has very many limitations, both regarding the contents as well as the display. At present the Survey only runs what are known as Site Museums, which, as the nomenclature shows, are attached to an excavated site or to a monument and contain material only from the place where they are located. Whether or not it should be within the jurisdiction of the Survey to establish a Museum of Ancient Ceramics is a matter for fresh thinking. Any way, whoever put up the museum, it is doubtless a great desideratum.

I am afraid I have taken much too much of your valuable time and <sup>beg</sup> your pardon for the same. I once again thank Professors Datta and Sinha for their kind invitation and hereby declare the seminar as 'open'.

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ARCHAEOLOGICAL ACTIVITIES IN BIHAR

A REVIEW

By

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Head of the Department of  
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Patna.

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## ARCHAEOLOGICAL ACTIVITIES IN BIHAR

Situated in the heart of the Ganga basin with Himalayas in the North, Orissan hills in the South, the State of Uttar Pradesh and Madhya Pradesh on the West and West Bengal in the East, Bihar offers an extensive scope for archaeological activities and research. Its natural isolation as provide by the Himalayas and Orissan hills, coupled with the absence of any well defined boundary <sup>on</sup> ~~and~~ the east and west contributed not a little to the free influx and outer flow of cultural elements throughout its long history. Account may be taken in this connection of the fact that Bihar had at one time been the seat of a large empire with its boundary extending far beyond its initial limit and on the other, it also preserved an integral part of the empire with the seat situated far beyond its borders. Thus the inter-play of cultural elements have no doubt left its impact on its culture and consequently on its archaeology. A thorough appraisal of the archaeological activities of Bihar, therefore, may have to be made against such a wider background keeping in view the significant and individual features of its archaeological remains and <sup>o</sup> ~~r~~ <sup>u</sup> ~~m~~ <sup>e</sup> ~~n <sup>t</sup> ~~s~~.~~

### I 1862-1892

The beginning of archaeological activities in Bihar as represented by systematic explorations and partial excavation work was actually initiated by Alexander Cunningham in 1862. Before Cunningham, some work had been done by B.H.Hodgson, Colonel Mackenzie, Stephenson and others. But Cunningham and his able assistants Beglar, Garrick and Carellyle carried over years an extensive exploration in South and North Bihar. Cunningham used as his basis the description of places and monuments as mentioned in Hiuen Thsang's travel accounts for



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locating the ancient sites and the monuments associated with them. In south Bihar he succeeded in indentifying places like Budha Gaya, Kurkihar, Giriyak.

Rajgir and Nalanda as associated with the life and activities of Buddha. In North Bihar, however, he is credited with the identification of modern Basarh with Vaisali and a detailed account of Kesariya Stupa, supposed Vedic burials of Lauriya Nandangarh, the Stupa from Nandangarh and the four Asokan pillars. The Rampura<sup>w</sup> Capital and column were discovered by Carlleyle in 1877. Of singular achievements of Cunningham's extensive survey in North and South Bihar, special mention may be made of the following. In the area around the Vajrasana throne at Bodh Gaya, Cunningham found three phases of flooring of plaster, granite and sand stone pavement respectively as associated with the three building phases of Vajrasana throne. The earliest represents the sandstone pavement associated with the sandstone portion of Vajrasana throne with carvings of geese on its sides. He also found the railing enclosing the circumambulation path round the temple and Vajrasana. Both the railing and Vajrasana have sandstone and granite portions, and they probably represent the work of two different periods. The sandstone railing pillars are ascribed to the late 2nd century B.C. or 1st Century B.C. in terms of the inscriptions inscribed on them, whereas the granite ones are considered to belong to the Gupta period in terms of the style of carvings of its reliefs. The Bodh Gaya temple is undoubtedly of a later period but the possible existence of shrine at the site as attested by the relief panels of Bharhut and Sarchi has been specially suggested by Cunningham. At Rajgir, Cunningham identified Sone Bhandar Cave with the place where the first



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Buddhist Council was held after the death of Buddha. He also discovered a cylindrical brick structure in the area now locally known as Maniyar Math. A partial excavation at the site by Cunningham yielded three small figures of which only two could be indentified as that of Maya lying on a couch with ascetic Buddha portrayed above and the Jain Tirthankara Parswanath. His identification of Nalanda with the mounds and ruins situated within the close vicinity of modern Bargaon village about 8 miles from Rajgir was confirmed by the later excavations at the site. He also identified a few tanks of the area and indicated the probable spot of the central stupa shrine at Nalanda. Further, his detailed account of the two group of caves at Nagarjuni and Barabar respectively dedicated to the Ajivaka sect by king Asoka and Dasrath still provide the most authentic record despite a few discrepancies or errors. The caves are noted for their high interior polish, the vaulted roof and doors carved in the shape of a ogee arch. In North Bihar, he discovered at modern Basarh (22 miles to the N.W. of Muzaffarpur and identified with Vaisali) an oblong fortified area measuring 1700 ft X 800 ft which is locally known as Raja Visala ka Garh. As to the stupa at Kesariya (about two miles to the S.W. of Kesariya I.S. and on the east of the road from Motihari to Chapra). Cunningham assigns the upper structure or stupa measuring 68 feet 5 inches in diameter and 51 ft. 6 inches in height, between 200 to 700 A.D. and considers the lower structure to be a memorial stupa built by the Lichchhvis of Vaisali. At Lauriya Nandangarh, he considers the 15 stupas represented in three rows within the close vicinity of Asokan pillar, to be the sepulchral mounds of Indian Kings of pre Buddhistic period. A partial excavation by him resulted in the clearance of a retaining



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wall which he regards as fairly late.

Thus the work carried on by Cunningham and his able assistants during the period between 1862 and 1882 brought to light a number of sites with rich archaeological possibilities. While Cunningham and his able assistants were engaged in identifying ancient sites and monuments of the historic period, Hughes in 1865 picked up possibly the first palaeolith from the bank of Bokaro, a tributary of Damodar in Hazaribagh district. The hand <sup>axe</sup> reminiscent of Madras industry is made out of green micaceous quartzite and was found in apparent association with the tab<sup>l</sup>uses of pebbles from the Gondwana rocks of this region. In 1688, Beeching collected from the area between Chakradharpur and Chaibassa microliths or flakes representing essentially a flake industry.

## II 1892-1939

The work of Cunningham and others, thus, provided a solid basis for the operations of the spade of the archaeologists and consequently the period between 1892-1939 is noted for the series of excavations spread over years at different sites in Bihar. The first in the series is the excavation conducted by L.A. Waddel (1892) at Kumrahar, a locality situated to the south of Patna. The excavations were limited in extent but he succeeded in disproving the older theory that Patliputra had been cut away by the Ganges. The excavations by Bloch and Spooner at Vaisali (1903-4 & 1913-4) yielded objects mostly of Gupta and only a few objects of pre-Gupta period as represented by the terracotta figurines dating from the first century B.C. Other finds included two hellenistic heads, punch-marked coins and terracotta seals.



## 5.

At Lauria-Nandangarh, T. Bloch of the archaeological survey of India took up excavation works in 1905. The excavations revealed that one of the Stupas contained a deposit of burnt bones with charcoal and another yielded a gold leaf with a female figure akin to the one from Piprawa. Bloch labelled these mounds as vedic burials but there is no evidence to support this view. There is another probable view that they represent Buddhist stupas. Excavations at Maniyar Math in Rajgir by Bloch in 1905-06 revealed that the hollow edifice (discovered by Cunningham) was enlarged several times including in the late Gupta period, when niches were provided on its outer face for images modelled in Stucco. A Naga figure in stone inscribed with the name Maninaga was found by the side of the structure. Further, the excavation in the new Rajgir area resulted in the discovery of terracotta seals of 2nd century B.C. and six uninscribed cast coins, known to be current in North India two or three centuries preceding and following Christ.

In 1911, D.B. Spooner of the Archaeological survey of India carried on further excavation at Kumrahar initially with the funds provided by the Tatas. In course of his excavation, he found below some brick structure ascribed to Gupta period, eight heaps of polished stones in eight rows of ten heaps, with an interval of 15 feet from heap to heap amidst a deposit of charcoal and ash. Spooner took it to be the site of the Mauryan pillared hall, whose wooden structure had probably caved in as a result of a conflagration. He also found to the south of this hall seven wooden platforms, each measuring 36 feet long, 6 feet wide and 4½ feet high, but their purpose could not be ascertained.



## 6.

In 1916 and 1922, the excavations were conducted at Nalanda by D.B. Spooner and J.A. Page respectively. The bulk of the structural remains, that the excavations have brought to light, actually belong to the post Gupta period with the exception of the main Stupa shrine which shows seven restorations or seven periods of building activities. The Stupa shrine was the most imposing structure during the fifth period when it had four corner towers and was adorned with niches enclosing the most beautiful stucco figures of Budha and Bodhisattavas. The date of the structure has been fixed according to a brick tablet inscribed with a Buddhist text and bearing the date 197 of the Gupta era i.e. A.D. 516-17 inside one of the votive stupas attached to it. The sixth and seventh restorations of the main stupa shrine belong to the post Gupta period. Among the other structural remains of the post Gupta period, special mention may be made of the eight rows of monasteries and the three temples. The three temples have each a central shrine on a high podium with stucco images installed therein. The essentially Gupta finds from the excavations include coins and a large number of seals of Gupta emperors and other contemporary rulers. The finds of the Post Gupta period include a large number of stone images of Buddha and Buddhist deities, bronze images, terracotta plaques and seals of which the official seals of Nalanda monastery bearing the legend Sri-Nalanda-Mahavihariya arya bhikshusanghasya deserve special mention.

In 1918-19, the excavation conducted by H. Pandey at Belwa (district Shahabad) did not yield any significant structural result excepting the terracotta figures of Gupta and partly pre-Gupta age, which are now in the Patna museum.

In 1926, M.J.A. Page and M. Ghosh carried out excava-



tions at Bulandibagh, a little to the west of Kumrahar, where below some brick building of Gupta date, they found a unique wooden structure running east to west for a distance of about 250 feet. The wooden construction consisted of a series of 14 ft. long wooden planks at bottom, flanked by 13 ft high wooden uprights and these were spanned on top by tenoned planks. The excavators have identified it with the wooden palisade as mentioned by Megasthenes. Other finds from Bulandibagh include Punch-marked coins, seals, terracotta figurines, a wooden cart wheel etc.

In 1935-36, Shri N.G. Majumdar further examined the four mounds at Lauriya-Nandangarh. In course of the excavations, he found that the burial memorials had a burnt brick basement. Further, the layers of yellow clay mixed with grass and leaves in the core of the stupa, which accounted for the vedic theory of Bloch were nothing but ordinary mud brick. He therefore suggested that it was not true to regard these monuments as connected with vedic burial rites.

In 1939 Shri A. Ghosh's excavation at Nandangarh ( a little to the south west of Lauriya Nandangarh pillar) revealed a large stupa with a polygonal base and rising in terraces. The earthen core of the stupa provided the punch-marked coins, cast copper coins and clay sealings of 1st century B.C. But further down below the structural surface was found a complete miniature stupa and by its side lay a copper vessel containing birch-bark Buddhist manuscript written in the script of the 4th century A.D. This evidently showed that the stupa had been reconstructed about that date after cutting through from above.

Apart from the excavated results the other important discoveries of this period include terracotta figures of Sunga and Kushana period as obtained from Buxar by A. Banerjee



8.

Sastri, Bronze images of Kurkihar by Rai Sri Hari Prasad of Gaya, the female figure of a Chauribearer from Didarganj, the Jain Tirthankar from Sohanipur and the unpolished sand stone figures from Patna ascribed to 300 B.C. and usually identified as Yakshas. Mention may also be made of the Asura sites discovered by S.C. Ray during 1915-26 and the collection of microliths, neolithic tools and copper implements from Chotanagpur and Sathal Parganas, which are now in the Patna Museum.

### III 1950-68

The outbreak of the 2nd World War in 1939 accounted for the big gap that followed in the sphere of archaeological activities and it is not until 1950 that we notice any concerted effort being made in Bihar for undertaking exploration and excavation work. In the meanwhile, two very significant developments had taken place; the far reaching changes that followed in the wake of Political Independence of our Country and the introduction of the observation of stratification in the excavation by Sir Mortimer Wheeler during his tenure of office as the Director General of Archaeology in India. Both had their effects on the archaeological activities of our Country. In Bihar, however, the interests that followed during post independence period is amply borne by the excavations taken up at different sites. Further the excavations at Rajgir under Sri A. Ghosh and at Vaisali by Sri K. Deva of the Archaeological Survey of India, were carried on in terms of the new technique of stratified digging. The scrapping made in a section cut by a rivulet at Rajgir yielded interesting data. The occupations at the site suggested a sequence of four periods corresponding roughly to Maurya, Sunga and Kushan periods. The excavations brought to light post



cremation burials from the lower levels yielding the N.B.P. Ware.

The excavation at Garh site at Vaisali had been undertaken with a view to determining the nature of the defences of Garh area. The excavations revealed two different phases in defences namely the mud-rampant and mud-brick structure in the second one. The cutting at Chakramdas touched the earliest level as characterised by N.B.P. Ware, black and red ware and the associated objects consisted of bone points and a few iron objects. The excavations revealed four period of occupation at the site corresponding to Maurya, Sunga, Kushana and Gupta.

The excavation at Kumrahar by the K.P. Jaiswal Research Institute, Patna, spread over a period of five seasons (1951-55) revealed that pillar stumps were removed during 2nd century B.C. after the conflagration and further the pillared hall as found in Spooner's excavation did not extend either to the East or West. The structural remains included a platform with a staircase, a covered drain, a monastic establishment known as Arogya Vihara according to a clay sealing and also an embankment of sand for providing protection against flood ranging in date from Maurya to late Gupta times. Other finds consisting of punch-marked coins, uninscribed cast coins (Kushana and Kausambi issues) and terracotta of fine Gupta workmanship deserve special mention. The excavations revealed five periods of occupation corresponding to the Maurya, Sunga, Kushana, Gupta and late Gupta times.

Excavations undertaken in the isolated areas in Patna City viz; Gulzarbagh Press area, Mahabirghat, Begam Haveli and Shah Kamal Road during 1955-56 also revealed the same five period of occupation ranging from 6th century B.C. to the 7th Century A.D. The mid-eastern circle of the Department of Archaeology concentrated its work at Rajgir and during its



## 10.

four season of excavation work (1953-54 - 1957-59) at Jivakamravana site under Dr. D.R. Patil on the one hand, and Dr. K.C. Panigarhi and Shri A.C. Banerji on the other, brought to light two long elliptical halls of which the latter one had in the centre subsidiary rooms surrounded by a compound wall.

The excavations at Vaisali were conducted by the K.P. Jaiswal Research Institute, Patna, for five consecutive seasons from 1958-1962 at the following sites viz; Kharaunaka-Pokhar, stupa mound to the north west corner of the Garh area, Bhimsena ka Palla, Chakramdas, Benia and Lalpura, Virpura, Marpasana. Collectively speaking, the most significant structural results of the excavations include an Ayaka Stupa containing a relic casket in soap stone probably of Buddha, remains of a defence wall made of baked bricks and structures like military barracks. The minor antiquities consisted of terracotta figurines, beads, coins, besides finer pieces of N.B.P. ware, a few P.G. Ware sherds, black-and-red ware pieces and other pottery types.

The K.P. Jayaswal Research Institute undertook a trial excavation at Karian (Distt. Darbhanga) in 1955 with a view to ascertaining the birth-place of Udayanacharya, a great philosopher of the 10th century A.D. The excavation revealed that the site had been under human occupation at least from the Gupta period if not earlier (Vide S.R. Roy's Karian Excavations 1955, Patna, 1965).

But the most interesting and probably of far reaching importance are the results of the excavation at Sonpur in the district of Gaya. The excavation conducted at Sonpur for four seasons (1956-57, 1959-62) by the K.P.J. R. Institute Patna, have revealed three successive cultural periods with a sub-division in the earliest phase. Sub-periods 1 A and 1B



of period I are characterised on the one hand by Crude black and red ware, usually wheel made with instances of completely hand made vessels and finer pieces of black-and-red ware invariably wheel made and often well polished on the other. Of special interest are a few post crematio pit burials of sub-period I B. The pit burials, each a circular pit about 1.2 to 1.8 meter in diameter and 75 c.m. in dept are filled with ash, bone-pieces and potteries in coarse red, black and black and red wares. Period II is marked by occurrence of the N.B.P. Ware of fine golden and silvery varieties and of special interest are half a dozen polished stone axes ascribed to this period. The excavations at Sonpur, thus, show the meeting point of three cultures namely the iron age culture of the north, the black-and-red ware reminiscent of Chalcolithic culture of Western India and the polished stone axe culture of the Deccan.

In 1960, the excavations were started at Antik near Colgong in the district of Bhagalpur by the Department of A.I.H. and Archaeology, P.U. with a view to determining the site of the Vikramasila University. The four seasons of excavation work at the site revealed a large stupa with shrine chambers containing huge terracotta figures of Buddhist deities on decorated pedestals. One of the shrines contains stone figure of Buddha in Bhumisparśamudra.

Excavations at Chirand (District Saran) and Buxar (Shahabad) were carried on by the newly started Directorate of Archaeology and Museums, Government of Bihar. The two seasons of excavation work at Chirand (1962-64) have brought to light painted black-and-red ware of Ahara type from the earliest levels.

The excavated remains at Buxar (1963-64) include terracotta figures of possibly pre-Mauryan times from the earliest level as well as finer varieties of terracotta



12.

figurines of Sunga period & large sized terracotta balls. Mention may be made of the excavations conducted by Mid-Eastern Circle, A., Survey of India, Patna at Balirajgarh site in the district of Darbhanga, where a stratum of pre-Mauryan times has come to light. The same institution carried on some Asura site excavations at two different spots in the district of Ranchi in 1964-65 and 1965-66 respectively. The former was a habitation site at Saradkel and the latter a megalithic one at Khuntitoli.

The State Archaeology and Museum, Bihar, recently undertook Stone-Age excavations at Lotapahar near Chakradharpur (Singhbhum) in 1967 in order to find out a stratigraphic sequence of the Stone-Age culture. The excavation of one of the trenches revealed two cultural periods. Period I was characterized by Middle Stone Age tools on quartzite and Period II represented both the geometric and non-geometric microliths on chert.

Apart from the excavated remains, no less interesting and impressive are the results of exploration work carried over years by the K.P.J.R. Institute, Patna, Patna University and other agencies. The K.P.J.R. Institute carried an exploration work mainly in Chotanagpur region and some adjoining areas of Santhal Parganas and discovered a few stone age sites: Rajrappa in Hazaribagh district and Barda bridge and Lotapahar near Chakradharpur have yielded tools of Early Stone Age. Marvania & Pratapur in the district of Palamau have yielded microlithic tools of both geometric and non-geometric types along with a few upper paleolithic blades. Lotapahar and Chandil have yielded a few pieces of Neolithic celts.

The Patna University carried on exploration work mainly in Santhal Parganas and the area around the Kharagpur hills in Monghyr. The most important discoveries include tools



of Early, Middle and Late Stone Age and also neolithic celts from Bhimbandh, tools of Early and Late Stone Age from Karnakoljore near Deoghar, tools of ~~middle~~ Middle and Late Stone Age from the river valley of Santhal Parganas and stone pottery in association with neolithic tools from Jamtara area. Mention may also be made of remains of ancient bridge discovered at Jaymangla garh by a team of teachers of G.D. College, Begusarai (Monghyr).

Recently a Patna University team made an exploratory survey around the Antichak main stupa-mound within a radius of about 10 k.m. and discovered Middle Stone Age tools from Chandipur, beads and microliths of chalcolithic assemblage from Lalpur, Late Stone Age implements from Malakpur and Namsukh-kothi and specimens of chalcolithic pottery from Oriup; a trial excavation at the last mentioned site also revealed the same result. Another team of the Patna University along with Dr. R.V. Joshi of the Archaeological Survey of India reexplored the Bhimbandh and adjoining area, and the result was much encouraging so far as the Stone Age culture was concerned. The third team of the Patna University discovered black-and-red ware of chalcolithic assemblage from Maner (Patna district). The fourth team of the same University undertook an exploration in the Gumla sub-division of the Ranchi district where as many as eight Stone Age sites were located, viz., Barwe, Chainpur, Jamatoli, Kandra, Kurungarh, Nawadih, Nawagaon and Rajadera. The Anthropology Department team of the Calcutta University discovered in 1965-66 lithic industries in stratigraphic sequence near Deokulia in the district of Palamau. Besides, during the past few years, the different teams of the Calcutta, Patna and Banaras universities and those of the Mid-Eastern circle of the Archaeological Survey of India, K.P.J. Research Institute and State Directorate of Archaeology and Museum, have been carrying on stray explorations in the region of Bihar and have been adding to our knowledge with some new results.







PROSPECTIVE SITES IN BIHAR:

Although considerable archaeological operations have been done in the region of Bihar, still there are prospective sites which, after thorough check-up, may add to our knowledge in the field

Prehistoric sites: The valleys of Sanjay, Ajay, Subarnarekha, north and south Koels of the Chotanagpur Plateau and Man Valley near Kharagpur hill of Monghyr, which have already supplied stray finds of Palaeoliths, microliths and neoliths, if explored thoroughly, may bring forth some clues to cultural sequence of lithic industries. Besides, stone Age sites may also be located in other area of the region.

Megalithic Sites: In the Chotanagpur region there are megalithic sites which required thorough examination.

Chalcolithic Sites: The sites of Maner, Oriup and Manjhi, located in the districts of Patna, Bhagalpur and Saran respectively, need intensive excavations for the successful results of the Chalcolithic culture. Needless to say that in course of explorations the sites have yielded encouraging results of the culture in question.

Historical Sites: Bhelawar (Gaya District), Jaimangalagarh (Monghyr), Balirajgarh (Darbhanga District), Champanagar (Bhagalpur District) and Katra (Muzafferpur District) seem to be prospective sites of the early historical period. The sufficiently high mounds of the sites, along with the finds from the exploration and trial of local stray excavation reflect the great archaeological importance of the sites.

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# PROSPECTIVE SITES IN BHARAT

Although considerable archaeological operations have been done in the region of Bihar, still there are prospective sites which, after thorough check-up, may add to our knowledge in the field.

Prospective sites: The valleys of Ganga, Gomti, Gandak, north and south Kosi etc. Chotanagpur Plateau and Narmada near Chaturpur Hill of Mandla, which have already yielded stray finds of Palaeolithic, Mesolithic and Neolithic, in some cases, may bring forth some sites of historical significance. Besides, there are sites may also be located in other areas of the region.

Neolithic sites: In the Chotanagpur region there are several sites which need thorough examination. Chalcolithic sites: The sites of Mandla, Orissa and Nagpur, located in the districts of Mandla, Jabalpur and Nagpur respectively, need intensive excavations for the successful results of the Chalcolithic culture. Needless to say that in course of excavations the sites have yielded encouraging results of the culture in question.

Historical sites: Bhilsa (Vidya District), Lalitpur (Bihar), (Mandla), Balasore (Orissa District), Champaran (Bihar District) and Kashi (Uttar Pradesh District) are the prospective sites of the early historical period. The earliest high mounds of the sites, along with the finds from the excavation and trial of local survey excavation reflect the great archaeological importance of the sites.



Paper read at the Seminar on Indian Pottery  
organised by the University of Patna, 1968.

ROMAN POTTERY IN INDIA  
By

M. N. Deshpande.

While we were aware of the commercial contact between India and the Mediterranean world between the first few centuries of the Christian era and a number of Roman coins had been found at several sites in south India, it was not until Sir Mortimer Wheeler<sup>1</sup> pointed out to the great possibility of dating indigenous south Indian cultures with the help of Roman pottery that Indian archaeologists took seriously to the study of Roman pottery and other associated finds. The study began with the excavations at Arikamedu in 1945 which provided conclusive evidence of direct cultural contact with the Roman world. The excavation brought to light three distinct wares; (i) Arretine Ware, (ii) Rouletted Black Ware and (iii) Amphora.

Before we consider the significance of these and alike wares, it is proposed to give below a brief account of these ceramic industries in their place of origin and to study their dispersal in India.

ARRETINE WARE

<sup>2</sup>  
The term 'Arretine' is used for a soft and delicate red-glazed ware with shades varying from red to yellowish-red with the lustre rivalling that of 'sealing wax'. This ware was current from the last quarter of the 1st century B.C. to the first half of the 1st Century A.D. and is named after the place of manufacture 'Arretium' (modern Arezzo) in Italy. It was also manufactured at other centres in Italy, viz. Puteoli, Modena and Rimini. The term 'Terra Sigillata' meaning pottery with stamped designs applies and covers Arretine ware, as the Arretine is also decorated by a process whereby the unbaked pot is pressed into a stamped mould. Terra Sigillata, however, has a slightly earlier origin going back to the 2nd Century B.C. resembling the Campanian Ware with preceded it in being coated with a black glaze in imitation of metal. The change from black to characteristic red glaze took place about the beginning of the 1st century



glaze took place about the beginning of the 1st Century B.C.

The production-technique of the Arretine ware inherits the ancient technique practised from the Mycenaean Period through the Hellenistic Period of decorating the pot in relief by means of a mould. It is stated that "it is merely a natural and logical end-product in the evolution of ceramic art from the Mycenaean Period down to Roman times."<sup>4</sup> The Megarian bowls of Greece and Asia Minor also inspired the production of decorated hemispherical vessels of Arretium. The process employed in the production of these bowls consisted of preparing a mould by means of a stamp, the mould being later fixed and placed in the centre of potter's wheel and the wet clay thrown inside the mould with the lip added free-hand. The pot shrunk in size as it dried, ~~xxx~~ facilitating its removal from the mould.

In the Indian context, Arretine ware was first noticed at Arikamedu<sup>5</sup> in the cutting AK-II in four layers of sandy estuarine mud-deposit and the excavator thought that the duration of the deposit may be little more than 20 years and the latest Arretine ware on this site may belong to the last phase of the production of the ware, i.e. A.D. 45-50. Except for a tiny fragment of sherd with leaf-pattern probably of Dragendorff's from 11, the sherds represent undecorated cups and dishes, in some cases even without normal rouletting. The excavation surmised that these features were the symptom of lateness and therefore concluded that A.D. 20-50 would be the inclusive period for Arretine pottery at Arikamedu.

The main southern site AK.IV produced Sigillatta ware along with stamped sherds immediately underlying the brick-wall<sup>6</sup> of the early phase. Among the 22 shapes described in the report, three bear pottery-marks VIBII (probably VIBIE, possibly VIBIF) ITTA and CAMVRI. The types consist of flat dishes~~xxx~~ with straight or carinated sides with a base. One sherd has rouletted rim while another with a ring of ~~xxx~~ fine rouletting on upper surface. There is also a dish-like-bowl and a carinated cup represented by



a sherd approximating to a stamped example of Claudine date (A.D. 41-54). One fragmentary sherd, yellow with red veins may be described as marble vase probably produced by Arretine pottery as early as 1st century A.D. In previous excavations, at the same site, French archaeologists had brought to light a sherd of imitation or provincial Terra Sigillatta of reddish grey fabric with light red glaze and a very rough external rouletting. Another fragment belongs to a class of fine ware with leaf-pattern impressed from mould.

#### ROULETTED WARE

The technique of impressed decoration practised during the Hellenistic period gave rise to rouletted decoration which consisted of revolving a toothed-wheel on the wet surface of the pot and producing symmetrical picked decoration. This tradition was adopted in Sigillatta ware till the late Roman period and pottery was decorated on the inside and outside.

Rouletted sherds were found in stratified context at Arikamedu and their first appearance is placed towards the end of 1st century B.C. or the beginning of the 1st century A.D. In fact, they were found in all the strata of all the excavated sites at Arikamedu. The ware is stratigraphically and chronologically co-extensive with the amphorae but it preceded and outlasted Arretine ware by an appreciable margin. The excavator has also pointed out that it is relatively more abundant in the pre-Arretine and Arretine layers of the Northern Sector, signifying that the type became less popular after the middle of the 1st Century A.D.

As a result of careful study of the ware, the excavator has described the ware as "carefully potted on a quick wheel from a fine well-levigated clay which burned grey or, more often, greyish pink, the grey colour being due to the reducing condition under which the pot was fixed. Before, firing, it was usually treated inside and outside with a slip, which, on being subjected to an inverted firing, turned black inside and showed variegated shades of grey, black, yellow or brown outside.



Occasionally both faces are covered with black-slip and rarely with brown." He has further made a five-fold classification of the ware depending on the shades of the slip. The interior surface was burnished with the ~~the~~ polish and in some cases it approximated to the lustre of the N.B.P. though it was decidedly inferior. The pre-Arretine sherds usually had a brighter polish. The type is confined usually to flat dishes with incurved rim, the beak or the pronounced nature of inward projection account for different types. The exterior surface has grooving. The rouletting marks are usually on the interior in the form of concentric designs. ~~B~~ Besides the dishes there are shallow bowls, some without the internal rouletting.

The rouletting designs consist of minute triangles; diamonds of parallelograms; wedges or uprights, crescents; ovals or dots, or an eye-shaped device which is like attenuated diamond. The design with triangle is very common occurring in all-strata.

Rouletted sherds have been reported from Chandravalli <sup>8</sup> and Brahmagiri, at the former place it is associated with two denarii of Tiberius (A.D. 14-37) and two fragments of imported red-glazed ware of Arretine type.

It has been also reported from Sisupalgarh, <sup>9</sup> the specimens from the upper level having an inferior grey fabric being presumably of local manufacture.

The value attached to this ware can be adjudged from one of the sherd found rivetted with an iron-pin at Kosarapalli <sup>10</sup> in Andhra Pradesh. For the distribution of the ware, attention is invited to Appendix-I.

#### AMPHORAE.

The amphorae is a high two-handled pot with a neck. While a number of varieties of this ware are available in classical period meant for use at public festivals, weddings and funerary purposes, it became a standard vessel for transporting oil and wine during the Roman period. Instead of the footed variety of the classical period, pear-shaped and conical types in coarse



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~~fabrics~~ predominate the Roman period. The amphorae has usually a long cylindrical body with a pointed base, a long narrow neck and two straight-handles. The amphorae were pitched internally to preserve the wine<sup>11</sup>. The pointed varieties usually found in Roman period were used for storage in cellars with the pointed base fixed in the ground, but when meant for transportation a tripod was used for putting them in position. Its use was very extensive in Roman period and at Porta del Popolo and Pompeii<sup>12</sup> they were found in great number, at the latter place a hundred vases were found in a house.

In the Indian context Amphorae sherds are found at  
<sup>13</sup> Arikamedu, <sup>14</sup> Kanchipuram, <sup>15</sup> Kolhapur, <sup>16</sup> Nevasa, <sup>17</sup> Ujjain, <sup>18</sup> Ter, <sup>19</sup> Junnar, <sup>20</sup> Dwarka, <sup>21</sup> Devnimori, Nagara, besides Taxila in West Pakistan. The Taxila example must have travelled by the land route while south Indian specimens were transported by Roman traders along with the sea-route. At Kanchipuram nearly 50 conical Amphorae were recovered in broken condition, and these three were found in a row (pl. ). This would suggest that these vases were brought in large numbers and travelled in and from ports like Kaveripattinam and were used by Roman traders settled down at inland trading centres.

The amphorae vases found at Nevasa, numbered 63 of which 10 were handle pieces. The sherds are of creamy yellow to light brown colour, heavy and show a mixture of very fine sand in the clay. Among the handle pieces mention may be made of those with oval section having two grooves on the exterior. But the varieties of handles reported from Arikamedu have either plano-convex section or with a groove on the exterior. One of the amphorae sherds at Arikamedu was found along with pottery group 'A8' which contained a Terra Sigillata sherd stamped with ITTA.

Before we conclude this study of Amphorae it is worth while to point out that The Periplus contains quite a number of references to the import of wine in India along with other objects from the Mediterranean world.<sup>22</sup>



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LOCAL WARES

Besides direct importation of pottery from Mediterranean countries under Roman influence we have to deal with local varieties which came to be produced under Roman influence. This influence was exercised by the Roman who were settled down at coastal and inland emporia and who wanted for their use the types of wares they were accustomed to use in their native country. Local inhabitants probably also evinced interest in these new ceramics and the village potter produced such imitation wares for the consumption of the sophisticated class. The first quality of these wares is their fine texture and the use of welllevigated clay for the production of pottery with polished red surface. The most important type to be copied was the so-called sprinkler which is in fact flat based elliptical jar with a high, narrow, neck having a small perforation and a vertical spout at the shoulder. Its prototype in the bronze was found at the Brahmapuri mound at Kolhapur along with other objects of Roman importation. This vessel became popular specially amongst Buddhist community for many sherds of this type have been found from the accumulated debris of cisterns attached to western Indian caves like Pitalkhora, Kanheri, Karle, Junnar, etc., as also at other Buddhist sites like Devanimori, etc. Its sculptural representation is also met with in a slightly evolved form in the Mahayana Chaitya Cave no. 29 where the sprinkler is shown along with a tripod over the platform on which the mahaparinirvana figure of Buddha is carved. The flagon of wine held by a foreigner lady and depicted on the ceiling of Cave no. 1 at Ajanta also has a long neck and similar shape suggesting that the type was popular with foreigners and also with Buddhist laity. It is well known that a large number of donations to western Indian caves came from Yavanas who were no other than the Roman traders, settled down in western India.



As regards the local limitation of Arretine ware particularly with stamped decoration, it will be worth while to study the pottery from Ter collected by a local enthusiast, Shri Ramlingappa Lamture who was good enough to place the material at my disposal for purposes of study. This pottery clearly ~~xxx~~ suggests that the stamped decoration on the vessels was produced out of a mould in which the pot was pressed while it was still wet. These pots, however, being near spherical in shape, two moulds were used as suggested by a clear line of junction left on the surface of the pot (vide fig. 1). This technique apparently was adopted by the local potter to produce the types of pots the Yavana traders sought for. It is analogous to the technique of Terra Sigillata about which reference has already been made earlier. The decoration usually consisted to tongue-shaped or leaf-shaped pattern around the base with geometrical pattern appearing just below or on the carinated portion of the pot. This decoration was also copied on terracotta lamps found at Ter. The tongue-shaped decoration radiating from the base has analogous in Terra Sigillata.

The use of stamps sometimes containing figures of animal or human-beings were also noticed (pl. <sup>24</sup> ). It is not ~~it~~ unlikely that the cylinder seals found at Ter, Ellora, etc., were used for the decoration of the pottery, under Roman influence.

Some classical traits also came to India along with Roman and applique decoration on vases came to be copied. Some sherds from Ter with grotesque applique figures on pots represent this contact (fig. <sup>25</sup> ). In this connexion attention may be drawn to the find of the head of Hercules on the handle of a vase of Greek Black Ware. Lids with female figurines from Ter are also suggestive of this contact. A lid with a crouching lion on top, <sup>26</sup> (pl. <sup>26</sup> ) is another very interesting object from Ter. The lion figure measuring 0.10 m. in length and 0.75 m. in height.



height stands on a base of a lid which must have been used as a cover for a funerary urn.

<sup>27</sup>  
The Red Polished Ware found at several sites in Saurashtra and Gujarat like Vadnagar, Baroda, Amreli, Devnimori, Somnath, etc. in the first few centuries of the Christian era among which the sprinkler is also invariably found may also be the result of Roman contact. Systematic excavation of a few more sites would help in putting this pottery in proper context and provide further clues of Roman contact. The sprinkler type as already pointed out earlier is found widely diffused at a number of sites in northern India and this diffusion may have been caused by its popularity with the Buddhist community and consequently it continued over a long period of time, the later types not having the typical Red Polish of the early period.

It may not be out of place to point out that the predilection for stamped decorated pottery seen during the Gupta period was the indirect result of the local imitation of stamped pottery during the period of Roman contact. The excavation of Devnimori <sup>28</sup> where remains of a Buddhist settlement were uncovered has also brought to light clear evidence that Red polished ware and black pottery of the Arretine type continued to be used in the 3rd-4th Century A.D. and that among these was the extraneous element provided by an amphorae. Among the indigenous types ~~in~~ is an interesting assortment of stamped and decorated ware which shows continuity of tradition from the early centuries of the Christian era almost up to the Gupta period. The mould-made pottery of the Gupta and of subsequent periods from Ahichchhatra <sup>29</sup> also has decorative devices derived from some of the earlier ones that were in circulation prior to the second Century A.D. While some of the decorations were, no doubt, derived from symbols such as are found on Indian coins and sculptures from the 1st century B.C. to the third Century ~~B.C.~~ A.D. as suggested by Shri K.C. Panigrahi, these appear to have been also derived from the large variety of decorations inspired by the Roman contact.



- 4 -

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17. I.A.R. 1957-58, p. 67.
18. I.A.R., 1962-63, p.7.
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20. I.A.R., 1963-64, p.10.
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- II -

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23. Sankalia, H.D., & Dikshit, M.G., op.cit. pl. XXXIIID.
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27. For distribution of the ware see Appendix-II, which contains only a select list of sites.
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29. Ghosh, A., and Panigrahi, K.C., Pottery of Ahichchhatra, Ancient India, no.1, pp. 41-55.

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#### APPENDIX - I

Rouletted ~~X~~ Ware has been found at the following places:-

#### ANDHRA PRADESH

1. Amaravati.
2. Dharnikota.
3. Kesarapalli.
4. Kondapur.
5. Maski.
6. Mukhlingam.

#### M\_A\_D\_R\_A\_S

1. Kanchipuram.
2. Kaveripattinam.
3. Sites in Cauvery Basin.

#### UTTAR PRADESH

1. Rajghat.

#### WEST B E N G A L

1. Atghara.
2. Baral.
3. Chandraketugarh.
4. Harinarianpur.
5. Tamluk.



A select list of sites containing  
Red Polished Ware.

1. Bihar - Buxar, Maner, Sonapur, and Virpur.
2. Gujarat - Hanmandhoro (District Amreli); Alehar, Bhegali, Chandgad, Jilada, Keriyaold, Khalavad, Khodiyar, Lalayo, Makavana, Nehur, Old Rampura, Old Tarpada, Patana (Paliyad), Patana, Sonpari, Taluja, and Timbi (Dist. Bhavnagar); Kalavad (District Hallar); Dwarka (District Jamnagar); Dhank Caves (District Junagadh); Hirnay and Jain Kandorna (District Madhya Saurashtra), Modhera (District Mehsana); Khakhra Bela-2 (Dist. Rajkot); Shamlaji (District Sabarkantha); Arena, Bhadaria, Boricha, Sutrapada and Uparkot (District Lorath).
3. Jammu & Kashmir - Arnhoor.
4. Madhya Pradesh - Besnagar, Eran, Maheshwar, Tripuri, and Ujjain.
5. Madras - Kurichedu.
6. Maharashtra - Bahal, Bhokardhan, Gas, Kalyan, M Kaundinyapura and Pitalkhora.
7. Mysore - Herakal.
8. Rajasthan - Nagari.
9. Uttar Pradesh - Aichchhatra.
10. West Bengal - Chandraketurah, Pandu-rajar-dhini and Rajbadidanga.

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# PROBLEM OF THE OCHRE COLOURED POTTERY

By

Krishna Deva

The Ochre Coloured Pottery (OCP) with its variants Ochre colour ware or Ochre-washed ware was first recognized by B.B. Lal in 1951<sup>1</sup>, while reporting on his trial excavations at the Copper-Hoard sites of Bisauli, District Badaun and Rajpur Parsu, District Rijnor. In his report he described the pottery 'ill-fired, thick, ochre-washed and rolled'. He also identified the pottery in the lowest cultural deposit of Hastinapur (Hastinapur I), preceding the Painted Grey Ware and attributed it to the authors of the Copper-Hoards, who, according to him, inhabited the Ganga Valley earlier than the users of the Painted Grey Ware.

In 1952, Y.D. Sharma<sup>2</sup> came across this ware in good quantity at Bahadarabad, near Hardwar, where he narrowly missed establishing a direct link between the pottery and the Copper-Hoard which was excavated by the canal-diggers a little earlier. In recent years this pottery has been excavated at the sites of Ambkheri and Bargaon in District Saharanpur by M.N. Deshpande,<sup>3</sup> at

1. B.B. Lal, 1951 "Further Copper Hoards etc." Ancient India, VII, 20-39  
1953 "Protohistoric Investigation" Ancient India, IX, 91-93  
1955 "Excavations at Hastinapura" Ancient India, X-XI, 31-32
2. Y.D. Sharma, 1956 "Past Patterns in Excavations at Rupa". Lalit Kala, I-II, 121-29  
1961 "Copper-Hoards and Ochre Colour Ware. Conference on Asian Archaeology, New Delhi."  
1964 "Protohistoric Remains", Arch. Remains Monuments & Museums, New Delhi  
1965 Indian Prehistory, 1964 (Poona), 131-35.
3. M.N. Deshpande 1965 Indian Prehistory, 1964 (Poona) 127-29



-: 2 :-

Atranji Khara in District Etah by R.C. Gaur,<sup>4</sup> at the well-known site of Ahichchhatra (District Bareilly) by N.R. Banerjee<sup>5</sup> and at Noh near Bharatpur by Vijay Kumar<sup>6</sup> of the Rajasthan Department of Archaeology and Museums. At the three last mentioned sites, viz., Atranji Khara, Ahichchhatra and Noh, the pottery has been encountered in the earliest cultural deposits immediately above the natural soil, repeating the stratigraphical sequence of Hastinapur. The recent evidence from Ahichchhatra remarkably corroborates even the cultural sequence of Hastinapur, where the users of the OCP were the earliest settlers followed by those of the Painted Grey Ware. During the last five years more than ninety sites of this ware have been explored and put on the map in the Upper Ganga basin in the Districts of Saharanpur, Muzaffarnagar, Meerut and Bulandshahr in Uttar Pradesh and in the contiguous Sutlej Basin in the Districts of Ambala and Jullundur in East Punjab, mainly through the persistent efforts of K.N. Dikshit, Shankar Nath and H.K. Narain under the direction of M.N. Deshpande and the author.

#### Distribution

The area of the OCP is thus seen to extend from Bahadarabad near Hardwar to Noh near Bharatpur, a distance of roughly 300 Kms. from north to south and from Katpalon near Jullundur to Ahichchhatra, a stretch

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4. R.C. Gaur, 1967 I.A.R. 1963-64, 55-57  
1964. Indian Prehistory: 1964 (Poona)  
1967. I.A.R. 1963-64

5. Information from MS of I.A.R., 1964-65, pp. 73-75

6. Ibid., p. 64.



-: 3 :-

of about 450 Kms., from west to east. On the basis of the exploration hitherto conducted the focal point of the OCP appears to be the Upper Ganga-Yamuna Doab, particularly the present District of Saharanpur, which claims more than 80 sites of this ware. The thick concentration of the OCP sites in this region is not without significance although it will be rash at this stage to jump to any conclusion until the adjoining districts of Uttar Pradesh, further south and east and of the East Punjab, further west, are combed with the same thoroughness which has marked the exploration activities in District Saharanpur.

#### Association with Copper-Hoards

At the Copper-Hoard sites of Bisauli and Rajpur Parsi excavated by Lal (Lal, 1951), no copper implements were found with the OCP. At Bahadarabad the excavator (Sharma, 1961, 1964) could not establish direct association between the OCP and the Copper-Hoard, which, though unearthed a little earlier is believed by Sharma to have come from the OCP layers. Similarly a Copper-Hoard, now displayed in the Gurukul Kangri Museum, is said to have been unearthed at Nasirpur, a village about 12 Kms. south of Rorkee and 9 Kms. west of Ambkheri, which has also yielded the OCP. The trial excavations or field observations made at the above mentioned sites (with the exception of Bisauli, which is a ploughed-up and churned site) have shown them to be just single culture sites with shallow deposits yielding exclusively the OCP. The only indisputable evidence, however, of the association



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of the OCP with a copper implement, to wit a copper ring<sup>7</sup> of the type familiar from Pondi and Bahadarabad, comes from the controlled excavation at Bargaon on the Maskara, a tributary of the Yamuna in District Saharanpur. (Deshpanda, 1965, 1967).

#### Association with Harappa culture

The excavated site of Bargaon proves the association of the OCP not only with the Copper-Hoard but also with the Harappa culture. While the Harappa culture is represented by the finds of the typical Indus goblet, dish-on-stand, pedestalled vases, ring-stand and black-on-red painted pottery, together with a chert blade, terracotta and faience bangles, stone weight, terracotta toy-cart wheel and a variety of terracotta cakes, being other equipment of the same culture, some pottery shapes and designs betray other influences and traditions. A few pottery types and paintings show marked affinity with Cemetery H, while contact with Bara is definitely indicated by incised designs on the exterior of pots, including deeply cut chevrons (as on a ring-stand), wavy lines drawn by a comb-like object and small oblique strokes. Among the pottery types influenced by Cemetery H may be mentioned sherds of jars with splayed out rim and lower portion rusticated or treated with raised bands

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7. A similar copper ring together with a celt of thin section and a rectangular implement of an unusual type, believed to be an axe, is reported together with late Harappan pottery from the upper layers of Mitathal near Bhiwani in District Hissar, a site recently excavated by Shri Suraj Bhan of the Punjab University under the direction of Dr. B.Ch. Chhabra (information from K.N. Dikshit of the A.S.I.).



and long-necked flasks of medium size, often of appreciably thin fabric. The cord-impressed decoration familiar from Bahadarabad is also present here. Significantly, the OCP is a popular ware and comprises numerous varieties including familiar Harappan forms of the dish-on-stand, basins with beaded or beaked or everted and undercut rims, storage jars with thick clubbed rims, medium sized vases with globular body and ring or disc-base, bowl-shaped lids with central knobs and miniature vessels of sorts. A red ware with a fabric neither as sturdy as the Harappan nor as friable as the OCP, but often dressed with a slip tending to be evanescent is also met with, showing both Harappan and OCP types. Fragment of a grey ware dish-on-stand has also been picked up from the surface. Bargaon thus presents the picture of a derivative Harappan culture, mixed with elements drawn from such varied sources as Cemetery H, Bara and Bahadarabad, the last being a premier OCP site. The detailed analysis given above of the pottery from Bargaon is typical of the numerous sites in the Upper Ganga Dab which have yielded the OCP with or without the Harappan pottery, with but minor variations.



-: 6 :-

Among the single-culture OCP sites so far excavated Ambkheri in Saharanpur District is noteworthy. The short but informative accounts of the excavation (Deshpande, 1965, 1967) show that although the Harappan pottery as such is absent, the derivative Harappan shapes like the short-stemmed dish-on-stand and the remaining pottery types and designs (with the exception of the incised design) from Bargaon are all present, together with some elements of the familiar Harappan equipment such as figurines including a humped bull, toy-cart wheel and cakes of terracotta. A fine de-luxe flask with a long neck, oval body and flat base from Ambkheri closely resembles a Harappan<sup>8</sup> type from Cemetery R. 37, but the fabric is much thinner. Significantly all the Alamgirpur types<sup>9</sup> (with the exception of Sharma types 15-16 and 21-24) are available at Ambkheri in the typical Ochre-coloured ware. The OCP from Ambkheri is thus seen to have many more shapes than those represented at Atranjikhara and Bahadarabad and reveals striking affinities with the pottery types at Bargaon on one hand and at Alamgirpur, Rupar and Bara on the other, although the incised designs of the last site are absent here.

For a study of the Ochre-coloured Ware, the evidence from Alamgirpur<sup>10</sup> is important, for here we find some of the most characteristic OCP types (Sharma types 1-4, 6, 9, 14 & 17) in Harappan fabric together with the

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8. Ancient India III, p. 108, fig. 17, XXVII d.

9. Y.D. Sharma in I.A.R. 1958-59, pp. 50-55.

10. Ibid.



-: 7 :-

typical Harappan shapes, such as the Indus goblet, the cylindrical beaker with slightly flaring rim (Sharma type 15), the perforated brazier (Sharma type 20) and the small bell-shaped beaker with disc base (Sharma type 16). The ring stand (Sharma type 19) and the large carinated dish-on-stand (Sharma type 5), though typically Harappan shapes are not favourites with the OCP, so is also the Jar with wide flaring mouth (Sharma type 18) which derives its form and feature of rustication of base (where present) from Cemetery H. Sharma types 7 and 9 known also from Rupar in the Harappan fabric are similarly available in the OCP. The presence of such a large number of OCP types at Alamgirpur in the Harappan fabric and the adoption of numerous Harappan and Cemetery H shapes in the Ochre-coloured Ware possibly indicates close contacts between the late Harappan and Cemetery H cultures on one hand and the culture represented by the OCP on the other.

A comprehensive study of the cultural equipment including the ceramic types and decorations recovered from the late Harappan sites of the Upper Sutlej basin reveals a basic homogeneity among them with certain individual features. It is seen that besides numerous pottery shapes derived from Harappa, certain characteristic Cemetery H types like the dish-on-stand of medium size and jars with splayed out rims and painted motifs of the star and fish, typical of Cemetery H, are common to the Sutlej sites like Rupar, Bara and Dher Majra. Further, Bara has many incised designs on the exterior of jars and vases which occur in equal profusion at the Late Harappan sites of Katpalon in District Jullundur and Madiala Kalan in District Ludhiana, but with lesser frequency at Dher Majra and probably also at Rupar. It is noteworthy that these incised designs are



-: 8 :-

also found on the pottery from the OCP site of Bargaon, while we have already seen how some of the popular OCP shapes were inspired by Cemetery H. ~~The Upper~~

The Upper Ganga basin where the OCP sites are located thus appears to be the meeting ground of cultural influences derived from such diverse sources as the late Harappan and Cemetery H cultures and the incised ceramic traditions of Bara and kindred sites. If the people using the OCP, which represented the earliest culture of the Upper Ganga basin, be identical with the authors of the Copper-Hoards, as seems very likely, they appear to have co-existed with the Cemetery H folk as well as the Harappan stragglers, who travelled with the ceramic traditions to the Ganga basin along the Ghaggar (Saraswati) and the Sutlej and mixed with the people using the O.C.P.



GEOCHRONOLOGICAL INVESTIGATIONS  
OF THE OCHRE COLOURED POTTERY

By B.B. Lal

Chief Archaeological Chemist,  
Archaeological Survey of India.

Soil samples from OCP horizons exposed at Ahichchhatra, Bargaon, Hastinapura, Jhijnjhana and Nasirpur have been subjected to mechanical analysis with a view to determining the mode of transportation and sedimentation of the deposited material.

For mechanical analysis, the air-dry sample was first sieved through 0.20 mm sieve and the material so obtained was dispersed in pure distilled water and subjected to sedimentation analysis by the hydrometer method. (As per table attached at (A)).

The data given in the table show that the specimens are free from clay grade and are largely composed of fine sand, and coarse and medium silt. The proportion of coarse and medium silt (0.06 mm to 0.006 mm) is generally very high. In 9 specimens it is more than 90%; in 5, it is more than 80% but less than 90% and in five specimens only, it is less than 80%. Of the 18 specimens examined, 13 specimens show a marked sorting (more than 80%) in the coarse-medium silt grade. It is significant that the specimens from Bargaon and Hastinapura are least characterised by this feature of sorting. The explanation for this difference between Bargaon and Hastinapura material and the specimens from other OCP sites must be sought in the disturbed nature of the former. Bargaon lies in flat level ground and there is no evidence of any habitation mound. The pottery from this site was found to be of mixed type. It seems the material was considerably disturbed on account of ploughing. No explanation seems to be forthcoming for



a lower degree of sorting observed in Hastinapura samples. Perhaps, a larger number of samples would have to be examined before any definite conclusion can be drawn regarding the mode of transportation and sedimentation of the material from the OCP horizon.

The material from all these sites is thus not a flood-loam or alluvium which comprises equal proportions of sand, silt and clay. The clay-grade is absent from all these specimens including those from Bargaon and Hastinapura, and there is a high preponderance of the coarse-medium silt grade. There is, therefore, unmistakable evidence of the effect of transportation on the concentration and sorting of the material under examination.

Fluviatile deposits generally comprise all the grades such as clay, silt and sand in varying proportions and judged from this criterion, the samples in question do not appear to be transported and deposited by water. Sections exposed at several OCP sites have been carefully examined for any stratification characteristic of fluviatile sediments, but the soil from OCP horizon does not show any stratification or layers, but appears to represent a megascopically structurless homogeneous material. Fluviatile deposits, on the other hand, show distant layers of coarse and fine sediments.

What then is the origin of the sediments constituting the OCP horizons at these sites? In view of marked sorting and freedom from stratification and bedding planes, it seems that the material may not be water-laid and that flowing water may not be responsible for transporting and depositing it at the OCP sites. The possibility of stagnant water shedding its fine, suspended load has to be considered, but it is known that sedimentation under these conditions show a degree of stratification and produce megascopically detectable layers. However, the possibility of wind-action has also to be borne in mind, and further work in hand is likely to throw some light on this aspect of the problem. Wind-laid sediments such as



loesses are free from stratification, are highly sorted and contain more than 80% of the material in the grade 0.1 mm to 0.01 mm. If the OCP strata were wind-laid, the random distribution of the sherds at different levels within the OCP horizons could be explained as being due to the continuous sedimentation of wind-blown material at these sites, when OCP was being used.

#### The rolling and weathering of OCP.

The OCP has generally been described as an ill-fired, rolled and worn ware with a thick fabric and friable surface. The weathered surface of the OCP., the worn and rolled appearance of these sherds and the peeling off of the slipped surface have generally been attributed to inadequate firing, although prolonged water-logging and contact with river-silt have also been considered to be responsible for the observed condition of the Ware. It may further be observed that the OCP in thin fabric has also been reported.

The literature on the subject does not give a clear picture of the processes which have produced the weathering, rolling and worn-out effect on this Ware. The effect of weathering is not peculiar to OCP; other pottery has also been found in a weathered condition. Weather-worn pottery has been reported from the top layer of Alamgirpur-I. Ochre-washed pottery is rolled and weathered condition has been reported from Nasik I. The various aspects of the question of weathering of OCP merit a careful examination. These are firing, water-logging and salt-action.

#### Firing

It has been thought that the OCP shows a weathered surface on account of inadequate firing. No scientific evidence has been produced so far to substantiate the theory that the worn-out appearance of the OCP is due to



its having been ill-fired. A careful examination of the OCP would show that pottery is mostly red or ochre-coloured that only the core is grey, and that the friability or incoherence is superficial and not deep-seated. The Ware possesses a fine texture indicating the use of a levigated clay such as is generally found in other normal wares. The red colour of the Ware indicate that the firing had been done at a sufficiently high temperature in an oxidising atmosphere.

#### Water-logging

The weathered, worn-out appearance of the OCP has been attributed to water-logging, but the evidence on which this conclusion is based is not clear. If the worn-out-weathered effect is attributed to water-logging, many wares would have exhibited this sort of weathering. How is it that at Bargaon, where OCP has been found in association with another red pottery, the effect of water-logging is exhibited only by OCP and not by the other pottery?

#### River-silt effect

It is probable that the so-called rolling may have been produced by the abrasion of river-silt with the OCP. However, only the broken edges are generally found rolled and rounded, but the body of the Ware does not show the rounding effect of river silt. It is well-known that the pottery which has been washed by river and transported over long distances undergoes considerable erosion. It is difficult to see how river-silt could have brought about the physical weathering of the OCP and rounded off the edges only.

#### Probable cause of weathering

A careful examination of the OCP shows that the firing conditions were sufficient to produce a coherent



red ware of usual hardness. Inadequacy of the firing, therefore, does not appear to be the cause of weathering of the OCP. It is also known that the well-burnt, well-made Harappan pottery from the lowest levels is fresh and strong with a hard slipped surface bearing painted designs. This pottery, however, disintegrates rapidly if it is not washed soon after excavation. The explanation is not far to seek. The pottery remained in contact with saline moisture throughout its long period of burial in the soil. An equilibrium was established between the pottery and its saline and moist environment and there is no surface erosion or disintegration in this condition of equilibrium. Once the pottery was excavated and brought to the surface, the moisture present therein evaporated leaving the solidified salts in the pores. The crystallization of soluble salts in the new environment brought about the disintegration of the pottery.

It seems that the OCP remained exposed to atmosphere for a considerable length of time, and that before this stratum was sealed by later occupation, the pottery underwent considerable weathering as a result of prolonged exposure. When the OCP people were living, there was a gradual deposition of wind-blown material on the site under arid conditions and the pottery became weathered. Mounds which were strewn with well-fired pottery are known to show on the surface a reddish colour on account of prolonged exposure of the pottery under arid conditions. In view of this, it is probable that the OCP horizon had witnessed a period of prolonged exposure before it was sealed by later deposits.



Site & sample No.	Fine sand 0.2mm to 0.06 mm%	Coarse silt 0.06 mm to 0.02 mm%	Medium silt 0.02 mm- 0.006%	Fine silt 0.006mm- 0.002%	Remarks
Ahichchatra					
1	8.00	47.00	45.00	-	92% of the material represents the
2	9.00	41.00	50.00	-	91% coarse & medium
3	13.00	45.00	42.00	-	87% silt grades
4	2.00	13.00	85.00	-	98% -do-
5	2.00	44.00	54.00	-	98% -do-
Bargaon 1	22.00	37.00	41.00	-	78% -do-
2	25.00	36.00	41.00	-	78% -do-
Hastinapura					
1	27.00	42.00	31.00	-	73% -dp-
2	35.00	33.00	30.72	1.28	65% -do-
Jhinjhana					
A1	11.00	39.00	50.00	-	89% -do-
A2	8.00	43.00	49.00	-	92% -do-
A3	12.00	33.00	55.00	-	88% -do-
B1	23.00	40.00	37.40	-	77% -do-
B2	15.00	40.00	45.00	-	85% -do-
B3	12.00	38.00	50.00	-	88% -do-
B4	4.00	28.00	68.00	-	96% -do-
B5	4.00	20.00	70.00	-	96% -do-
B7	4.00	58.00	38.00	-	96% -do-
Nasirpur					
1	46.00	24.00	30.00	-	54% -do-
2	28.00	30.00	26.88	5.12	72% -do-



STUDY OF POTTERY - A New Approach

ABC of Archaeology of A to Z of Archaeology:

M.D. KHARE

Archaeological Survey of India.

रे माली के कुल्हड़े तोय और फोर बाय  
और बने हैं पीय को, तू फस पूरे जाय।  
— जायसी

How many of us in this distinguished gathering have tried to pose even a much simpler question to a potsherd, than that has been attempted in the above quoted couplet ? If a poet could find philosophy in it, can we not at least ascertain its make and purpose by intimate handling of a vessel ?

A Seminar on pottery was over due. The University of Patna deserves compliments to have realized its urgency. Since the study of pottery had all through these years been my ~~favorite~~ favourite subject, I am putting forth some of the observations, reduced to writing hurriedly, which I hope, might be of some use to the present gathering of archaeologists and historians.

It is merely a repetition to say that pottery is A.B.C. of archaeology. But most of us have also felt that treatment of the subject in course of a decade of archaeology in India has been rather far from satisfactory, because of its monotonous geometrical description of the types and a note on its general features. Very rarely conclusions based on the study of pottery have helped in giving a detailed picture of the day-to-day life of its users, or in co-relating it with the social and economic conditions. It does not, however, mean that the attempts made so far in this regard are less praiseworthy. The use of chemical analysis and other examinations conducted in the science laboratories have also proved to be of enormous help.

With some of these advancements in the field of science, where a few more laboratories specifically for research work in pottery alone are of a dire necessity, a very careful, systematic and perhaps statistical study may be useful. Most rewarding results, however, in my view could be had only



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when the student of pottery handles each sherd patiently for a longer time than spent so far and devotes more attention in finding out its specific use.

So far, the broad classification of pottery is based on typology, leaving aside, of course, the surface treatment. Now details have to be studied and worked out. Just as a bulk of potsherds, recovered from outside a wall would indicate a dump, abundance of cooking utensils in a restricted area suggest a kitchen or huge troughs found lying near a drain supposed to be a bath room, each sherd from respective groups or complexes should be studied individually and then collectively to find out, for example, as to how many of them could be used as milk, oil or water containers.

If the number of vessels, displaying the use of the milk is more, we could safely deduce that the ~~xxx~~ occupants' diet contained more of milk and its products. Similarly the use of fat or oil would suggest the taste of the people besides getting the information of the source of fat or oil. The evidence of milk, fat or oil would ~~found~~ unfold many other associated details i.e. the occupants of this particular structure are likely to be richer in cattle or in wealth than those in whose houses such containers are less. No wonder, we might be able to prove that a milkman lived in a particular structure just as potters' Kiln or goldsmiths' furnace are determined. This type of study would not give a picture of the whole of the township, from one individual to the other in a distant corner of an ancient city, but would also reflect on the economic and social condition of the people in general.

The frequency of huge jarda and troughs in one place and their non-availability in the other could also be due to several reasons, which may not be far to seek when studied in the context of their location, horizon, condition, contents etc.



The frequency of huge jars and troughs in one place and their non-availability in the ~~the~~ other could also be due to several reasons, which may not be far to seek when studied in the context of their location, horizon, condition, contents etc.

Again, ~~the evidence of each shard, whether~~ to be selected for the purpose of illustration or not, should be studied thoroughly before discarding it. Also it may not be very difficult to find out from a total number of cooking vessels, recovered from a site, to say, as to which one was used more frequently and perhaps for which type of cooking. The soot-stains on the body of such a vessel, confined to a portion or otherwise extended over the surface would suggest the type and condition of the fireplace and also the type of fuel used, even when ~~the fireplace~~ could not be located due to restricted dig.

Similarly the variety in lids, spouts, handles should speak of the types of vessels, on which lids were used, to which the spouts or handles were attached. They should further be illustrated by the probable conjectures of their contents.

While coming to stratigraphy, we find that change in the pottery types and also the other associated finds, if any, usually indicates a change of the layer as well. But proper emphasis on the fact necessitating such a change in the pottery types has rarely been laid - nay seldom studied thoroughly. Does it not signify an advancement in the richness of diet, convenience of drinking or fetching water, introduction of sophisticated living (with a pleasing variety of spouts and ~~handles~~) storage of grains, etc ?

A word about the standarization of the terms used in the description of pottery may not be out of place. It would be worthwhile to take the help of sankkrit words for equivalent types, used in the literature implying a definite use.



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It would be easier to write and also to understand such uniform terms.

Further, the study of modern pottery is equally very essential. There are many sherds, which are classified, as indeterminate or whose functions are not known. The study of modern pottery of the concerning region where the earlier types with a little or no change continue to be in use, would be helpful in determining the exact use and the type of the ancient pottery. It may not even be difficult to say, after seeing the modern pottery of a place whether an ancient site exists some where in the ~~xxx~~ vicinity or not. Again, the source of clay for modern pottery in the nearest habitation should be found out if necessary with the potters' help and the clay subjected to detailed experiments.

Such experiments could be done in the modern laboratories, specially available for this purpose. During my short stay in West Germany, I had an occasion to take up some practical training, when I myself was able to give a sherd the appearance of N.B.P. with its ringing round.

Since the pottery always outnumbered the other finds, serious attempts have to be made by us for deducing more and more information, which would go a long way in reconstructing the past. Such deductions, in many cases might prove to be subjective in the early stage of our adventure but will turn out to be objective with the increasing interest and subsequent confirmations made through experiments carried out in the laboratories.

Because of only one days notice to me about this seminar, I could not arrange my thoughts in order nor devote time to the analytical aspect of pottery. However, I have ventured to give the subject a new approach, by which the pottery would not be A.B.C. of Archaeology, but also ultimately prove to be A to Z of this science. The associated antiquities should only con-

\*present, firm our conclusions. We are still far away from the pottery. We have to go much nearer to it, so that the past could come to



RAJASTHAN'S POST-HARAPPAN POTTERY  
Black and Red ware from Ahar and Noh- A study  
in its types, fabrics etc.

By  
 Dr. S.P. Srivastava.

Ahar, a village situated about three furlongs from the old Udaipur Railway station, experienced the scientific use of spade at one of the mounds for several seasons. As a result of excavations conducted there, the first occupation, which started over a thin sandy deposit of natural soil under taken by rock-beds of the Aravalli system, revealed black and red pottery as the characteristic industry of the area. This pottery had a long life at Ahar, although it has been found at several sites in Central and Western India, one of which is Navdatoli, where this pottery occurs towards the top of Period I.

The period I at Ahar may be subdivided into IA IB and IC with a view to study Black and red ware and its associated wares. IA at Ahar has in it the cream slipped, the buff, blotchy grey and red slipped with variations like orange, tan & chocolate, the coarse black and red besides painted black and red.. Black and red ware, here, is very distinctive in the sense that it is painted with diverse designs in white lines, both on the exterior and the interior. IB also shows presence of all such wares, with the absence of the cream or buff ware & with only one shed of the Jorwe ware.

IC shows red washed, painted black on red, black and red, coarse red, the Lustrous Red and the blotchy grey wares. Black and red ware in the lowest phase has the texture and fabric rather coarse and the pots are polished on the exterior only. In the middle phase, this ware is finer and polished both in the interior and the exterior. A large number of them is usually painted in white but at times in black also with patterns of parallel lines and dots. In the last phase a devolution in the ware is noticed to have set in.

In this very phase a red ware painted in black on a slipped surface appears to have been in use. Throughout this period the black and red ware was associated with a plain red ware painted with incised designs on



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shoulders. The pottery of period I is mostly wheel-made. It shows different techniques in shaping. Besides wheelmade pottery certain hand-made vessels, which include the storage jar with applied bands and roundels, were also recovered from here. Some of the pots revealed combination of both wheel-made and hand-made techniques. In these wares the neck and the upper parts were wheel-turned but the rest were hand-made.

Some of the blotchy grey and red wares were very thin in fabric in the lower positions. The bottoms in several cases were made rough with the application of powdered quartz and sand. In the earliest stage, the black and red ware evinced certain special features. Dry grass or split bamboos appeared to have been used in giving effect to scooping, discernible in a uniform manner in the pottery with rounded or sagger bases.

The painted black and red is represented in the bowl with rimless straight or with convex sides. IA and IB phases present the bowl also with ribbings near the edge and also the shallow bowl with an external edge, and flared edge. These phases also present several specimens of the shallow pan and basin in them. The painted black and red ware in these two earlier phases has a variety with a brown slip.

From the point of view of decoration, the ware presents the following picture. The decoration may be classified as (a) painted (b) incised and (c) applied. The first may, again, be subdivided into two classes (a) dull white on the black and red ware and (b) black on the red washed or slipped ware. The former consists of linear patterns-strokes, lines, spirals, wavy lines, hatched diamonds and banners. These are all found in phases IA and IB. The other are panelled dotted chevrons, which are found in Phase IC. The black painting on red ware shows only bands, wavy lines and loops. This is confined to IC.

Incised decorations also occur on grey and red wares. These decorations are in the form of slanting or wavy lines, supposed to have been caused with the help of split bamboo strips.

The applied decorations on wares show either wavy or plain bands



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and roundels mostly to the red slipped and grey wares. This type of decoration is found mostly in the wares recovered from Phase IB. These decorations are either cut or excised. These are restricted mostly to red slipped and grey wares. These were probably caused by applied hands excised in a regular manner on the pots. These produced the effect of a cog wheel with sharp ends.

The black and red pottery was also recovered from the lowest phase of Navdatoli - a chalcolithic settlement on the bank of Narmada in Madhyapradesh. The carbon dating of the material at the site could place the pottery in the 18th century B.C. Again the carbon date for Ahar has also come to be 1878 B.C.

There is one more important thing to be studied with regard to black and red pottery. This type of ceramics as well as others found with it came to be associated with the material remains of the people who know copper smelting. The inhabitants of Ahar in the earlier phases were, thus living in the copper age and black and red pottery at Ahar comes to be the pottery of the copper age people. This is the cultural importance of the black and red pottery from Ahar.

Though the application of slip and the method of firing according to Dr. S.B. Deo, turned out several subdivisions among the red and the black and the pots as were fired inversely resulted in the combination of these two colours in one and the same vessel having a red outer bottom and the rim and inner surface black, the firing, in some cases, though executed in the inversed way, was not congenial to full oxydization with the result that such pots turned black and blotchy grey in parts. The grey ware represents a stage in which the Kiln allowed neither full oxydisation nor complete non-oxydisation. The relative abundance of the red-ware over the rest (according to Dr. Deo) suggests the adoption of the open Kiln than the closed one. The reaction of the constituents of the slip to the nature of firing resulted in the change in the form of



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pots, which are with deep red <sup>slip</sup>~~slip~~, those with a red <sup>slip</sup>~~slip~~ highly burnished and hence very shining or glossy and those with a dull red slip. A word may be said here about the paintings on the pottery.

Paintings occurring on painted sherds in all the three phases are of three types. These are in (i) dull white on black and red (ii) black on red (iii) black or cream or buff.

The sherds painted black on red are from the top most phase and are restricted in quantity. The sherds painted black on cream or buff are very little in quantity and come from the earliest phase. The paintings in all these cases are geometrical but were resorted to before the pots were fired.

The thickness of the white paint can be felt by hand in the case of the black and red but in the case of the other ware it is not possible to do so. Though it can not be said definitely how the paintings on sherds ~~were~~<sup>were</sup> executed, it appears from a study of the designs that some sort of indigenous brush was used for the purpose. Probably some sort of brush, preferably a bamboo splinter with pointed tip, was used for producing the designs found on the sherds. The even-thickness of bands and parallel symmetry of slanting lines are indicative of the skilled movement of artist's hand in his effort to keep the tip of the then brush like apparatus uniform all through by using proper and even pressure in using it. This accounts for the fact that varying effects were produced by the artist in executing paintings on pottery. That is why some sherds have in them delicate split ends of strokes some excess of paint at the point of beginning (as in a spiral design) and some extra quantity of paint splashed in drops on the body of the pot. This last effect was caused on the basis of such an apparatus of painting as was not able to have the excess quantity.

Though the sherds show, in the main, geometrical patterns of decoration, dot decoration of chevrons is found on the pottery only in the uppermost portion. The bands, spiral and groups of lines occupy a majority



of the space on the pot.

The chalcolithic black and red pottery of Ahar has found its counterparts at Darauli, Menal, Sialpure, Fachar, Tarawat and Joera in Udaipur district and at Undala, Viroli, Hironji ka Khera, Khor, Hingwani, Umand, Nangauli, Banseu, Sirdi and Keli in Chittorgadh district.

The usual shapes in black and red ware comprise the convex-sided bowl with a flared or everted rim and sometimes with a flanged shoulder, straight sides bowl with an everted rim, bowl with a carinated shoulder and everted rim and jar with a flared mouth - of a bright red exterior and black interior. All these pots, like those at Ahar, were also generally, painted externally and occasionally internally in various designs with a whitish pigment. The designs consist of vertical and oblique strokes, concentric circles, chevrons, dots and intersecting areas.

As has been remarked before, black and red ware has been found at Navdatoli in Malwa also. Its recovery from Ahar and other sites in Udaipur and Chittorgadh districts in fairly large quantity helps one to surmise that the south-west Rajasthan and its contiguous area of Malwa existed as one of the centres of Post-Harappan Chalcolithic cultures between 2000 B.C. and 1000 B.C. or so. Though this area has yet to know the scientific use of spade at various sites, discovery of stray black and red pieces leads us to substantiate our assumption.

The elegance in painted black and red ware, noticeable as it is on the basis of its highly burnished surface and painting in white colour makes Dr. Sankalia feel that it was the deluxe table ware of the chalcolithic period. Similar was the position with regard to the cream slipped ware. Such pots are coated with a thick slip of cream to greenish white colour. This ware has also been called the Malwa ware. It is reddish or pinkish in appearance. This ware is remarkable for the surface paintings. It is made of gritty clay but the potter takes extra care in making the surface smooth by means of a thick slip. It is adorned by painting in black colour which exhibits a wide range of motifs.



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Dr. Sankalia, on the basis of some of shapes in the cream slipped pottery and on that of designs, suggests a close cultural affinity with similar pottery and designs in Iron. This has yet to be established on the basis of further excavations in south western Rajasthan and Malwa.

As from Ahar and Navdatoli, excavations conducted at Noh 4 miles from the city of Bharatpur on Agra road also revealed from Period II black and red (in dish and bowl variety) in a limited quantity. But the black and red ware from Noh is different from the one found from Ahar and Navdatoli. Black and red ware here is, unlike the one recovered from Ahar, unpainted. It has been found occupying a separate phase just above the ochre coloured ware in between the ochre coloured ware and the painted grey-ware. The associated pottery of this period is coarse red ware and black slipped ware. No evidence of the use of copper and stone during this period is available from this level. The earliest evidence of civilisation discovered in the region is of culture represented by pottery of ochre colour which is, unfortunately, in very small pieces. This pottery, although thick and ill-fired, is nevertheless, wheel turned and has a reddish slip.

About 1500 B.C. or so, some other people came to this region and settled down. They made pottery of a superior quality, which was distinguished by the use of black and red colours which had a lustrous black slip.

Though Black and red pottery has been found extensively in central India in the Deccan, Eastern India and in south west Rajasthan, it has also been found for the first time in the upper Ganga valley, from where its use migrated through Jamuna tributaries to the Eastern Rajasthan, particularly in the Bharatpur region at Noh. This accounts for the fact that it represents for the first time in Rajasthan at Noh an independent phase intervening between the ochre ware phase and the later Iron phase. It is possible that the people, who brought this culture to the upper Ganga valley came from Central India or the Deccan,



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and from there the use of black and red pottery was extended to the eastern Rajasthan, in the region of Bharatpur through the people of the upper Ganga valley with such modifications in fabric and designs, as local conditions of the area could enforce on them. This accounts for the fact that the black and red pottery of Noh is not a slavish imitation of black and red from the Harappan sites or the chalcolithic sites at Ahar, Navdatoli etc.

We learn from other sources that towards the closing years of the 2nd millenium B.C. the Aryans reached the upper-Ganga valley and settled down there. They made their way into Rajasthan through the Jamuna tributaries. The radiocarbon dating of a charcoal sample excavated at Noh has scientifically proved for the first time that the Aryan settlements in the region date back to a period **before** 1000 B.C.

The characteristic pottery of the Aryans is painted grey and is of a superior kind. The pot-sherds reveal a super-imposition of a new technique over the previous ones. Many new types of earthen vessels, such as bowls, vases, dishes and jars have been found. Painting in black lines has been used for decoration with a rich variety of designs. The black and red pottery from Noh is the precursor of that type of pottery, which, in its improved form in later times was known as the black polished and the Northern black polished pottery and found its counterparts in that of the Sunga-Kushan periods. In the second-third century B.C. Black and Red ware is known from Kolhapur, Nasik, Newasa etc. and this ware, with black inside and red on the outer bottom, takes shape because of the technique of inverted firing. But this ware is associated with the copper slip and the use of microle<sup>155</sup> at Atranjikhora in much earlier levels, but it is not so with black and red ware available from Noh. The clay used in the unpainted black and red at Noh is impure and normally ill-fired. The fine levigated clay and the fine finish of the painted grey ware and the northern black polished ware is totally absent in most of the



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places there. The shapes in it are mostly utilitarian and the black and red effect is mainly due to the process of inverted firing. Most of these wares were used by the common man in every day life. It may be noted here that concave, carinated bowls made in black and red ware with paintings executed in white colour were used by people at Ahar some three thousand and seven hundred years back from now but this upright and flaring bowl with convex sides and round base which were found in black and red and were in use in eastern Rajasthan some seven hundred years after the discovery of black and red ware from Ahar. Convex sided bowls with rounded or ring base have survived even to this day and are used in Bharatpur area and also in Uttara Pradesh with ring base.

The painted black and red ware from Ahar, in short, was the Deluxe ware of chalcolithic period while the unpainted black and red from Noh was the pottery of the common man.

So far as the chronology of Black and red ware from Ahar is concerned, the carbon dated results of the site ascribe the beginnings of Ahar culture and so also of the associated B & R to C. 1800 and these go from 1385 to 1165 B.C. on the basis of the examination of carbon contents at IC late level but in the case of B & R at Noh we have to arrive at the conclusion from the point of view of chronology in a different manner. It is not possible to determine the ceramic sequence of Rajasthan between the decline of the protohistoric culture and the dawn of the historical age owing to the fact that Ahar failed to give FG ware or Northern Black polished ware.

B.B. Lal proposed in 1955 that FG ware <sup>might</sup> ~~may~~ be placed somewhere within the limits of 600 B.C. on the one hand and 1500 B.C., on the other and equated it with the pottery of the Aryans. Hastinapur FG ware was dated by him to Ca. pre-1100-800 B.C. Now carbon 14 dates have firmly established a time <sup>gap</sup> ~~gap~~ of about 700 years (Cs. 1750-1000 B.C.) between FG ware and the Harappans.

The discovery of black and red ware <sup>in</sup> ~~to~~ addition in the upper Ganga valley and at Noh in Bharatpur region in the eastern Rajasthan in pre



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F.G. ware horizon enhances the significance of both Aharian B & R and the B & R of Noh. An examination of the black and red wares from Ahar and Noh shows that there is a genetic relationship between the two and the B & R of Noh represents a phase assignable in front of chronology to 1100-1200 B.C.

G.R. Sharma in 1960 remarked that in Kaushambi he gets an echo of Harappan craftsmanship in the architecture of the period associated with the black and red ware. If the spread of the early black and red ware represents the early colonisation of the Aryans, which might mean the spread of Anu to the eastern India and that of the Yadus to the Deccan by the time they became regular city dwellers. B & R ware tradition being a ware tradition earlier than the F.G. ware tradition: y be taken to be the early Aryan ware while FG ware tradition is a late Aryan ceramic tradition. Obviously FG ware covers only the latter part of Dark Ages in the north folk migrations from western Asia in the first centuries of the 2nd millennium and the end of the Harappans by the middle of 18th Century B.C. and the sudden emergence of Deluxe B & R tradition ware was, probably, responsible for the introduction of B & R at Noh in early stages of the spread of upper Ganga culture in Eastern Rajasthan.

In order to study in detail the close relationship between the B & R of Ahar and that of Noh and to study if this ware used by the Harappans could trace the contacts of the Harappans and the Banasian and those of the upper Ganga valley people, large scale excavations at Gilund and Ahar (on horizontal basis) are a desideratum. Inverted firing of pottery is a specialised technique employed in this ware everywhere and since Harappan potters at Lothal were producing it, further excavations at all, such sites is likely to throw more light on this contact.

Affinities with Troy and Anav established by Dr. Sankalia strengthen the circumstantial evidence for this Aryan equation.

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SOME TECHNICAL OBSERVATIONS ON N.B.P. WARE SLIP

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The iron age deluxe pottery, the so called Northern Black Polished Ware on account of its great archaeological significance and superb quality has attracted the attention of the archaeologists ever since it was first reported.

The ware has a highly lustrous finish and its colour shows great variations amongst the shades of black and grey. Some varieties, however, show silvery and golden shades, while others are reddish, with deep red, chocolate and sepia variations. The present paper deals only with the black variety.

Views of Earlier Workers

The identification of the colouring agent of the black coating of the N.B.P. Ware and its characteristic gloss has been a subject of enquiry for the last 25 years. The views of Sanau<sup>1</sup>ullah, Lal<sup>2</sup>, Bimson<sup>3</sup>, and Hegde<sup>4</sup> are not compatible. A brief mention may be made here of their observations.

Sanau<sup>1</sup>ullah reports that black coating contains about 13% ferrous oxide, which is responsible for the black shade and that the coating is not siliceous glaze. He also mentions that ferrous silicate as responsible for the colour effect. To account for the lustre, he assumes the formations of ferrous-silicate and ferrous magnesia silicate, which being of low fusibility, bring about fusion of black film, during firing. Further he holds the possibility of the deposition of carbon and tarry matter in the pores to enhance the black colour.

Lal on the basis of his observations concludes that the black gloss of the N.B.P. Ware may have resulted by some



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sort of postfiring treatment in which the kiln-hot pottery was coated with some organic liquid of vegetable or animal origin. He further states that the exact conditions of firing and the nature of the ferruginous material employed in its manufacture still remain elusive.

Hegde concludes that the shining black slip, consists of a thin layer of black magnetic oxide  $\text{Fe}_3\text{O}_4$  which is responsible for the colour. He also mentions the formation of glass like substance. Due to the tendency of the slip to craze he suggests that slip was applied on baked clay.

In contrast to Hegde's views Bimbson observes that N.B.P. ware has been mistaken for Greek black gloss and she points out several differences. Thus a razor blade will run smoothly across the Greek black, where as it will cut into the Indian black (N.B.P. Ware). While Greek black is magnetic, N.B.P. Ware is relatively non magnetic. Greek black stands the temp. of  $1000^\circ\text{C}$ . without any change, while Indian black shows considerable variations in its resistance to such temperature. She adds, that bright gloss is not a glaze or lacquer. Microscopical examination of the ridged areas showed that the shiny surface is not confined to the raised parts, but its appearance may be related to some characteristic of the material used for the surface layer as found to be the case with Greek black gloss. The British Museum laboratory does not subscribe to the views of burnishing and its present view is that the unfired pots were dipped in a suspension of ferruginous inorganic material, probably resembling a red earth that after firing to a temp. of  $800^\circ\text{C}$ ., the kiln was sealed, so that the pots cooled in a reducing atmosphere. According to them the precise nature of the surface layer still remains unsolved.



Main differences of the earlier results.

While the views of Sanaullah may be taken to mean that ferrous silicate is chiefly responsible for the colour effect, which might have been enhanced by the deposition of Carbon and the tarry matter; the views of Lal may suggest that post firing application of organic material on the hot pottery is chiefly responsible for the lustrous black. Hegde claims that black colour is due to magnetic oxide of iron -  $Fe_3O_4$ , and the lustre is due to glass like substance. Bimbson's observations contradict Hegde's assertions, but without providing suitable alternate explanation.

Present Work

## Method of Separation of Slip

MECHANICAL SEPERATION

Seeing the widely different views of the various workers in the field, we took up the problem. It was soon realized that there is great difficulty in the clean removal of the slip without admixture with the body material. The earlier workers too might have met this difficulty. Despite various efforts to remove the black coating from the body, a clean separation of the slip was not possible by mechanical means (by use of sharp instruments). The material thus obtained was always adulterated by the adhering body clay.

It may be inferred that black coat is very thin and when we scrape the slip, we actually cut into the body clay.

CHEMICAL METHOD OF SEPERATION

However, successful separation of the slip by chemical method was achieved. The N.B.P. Ware sherds were treated with the minimum amount of HF just sufficient to wet the surface. Sherds were kept in a hot atmosphere for a few



minutes. It was noted that slip had been disengaged by this treatment. The disengaged slip was removed by means of jet of water and was profusely washed and examined.

Some observations and Tests.

1. Visual examination of the disengaged slip reveals that in case of black variety of the Ware, both the upper and lower surfaces of the slip are black.
2. Clean separation of the slip by chemical means may indicate that slip and body have not coalesced.
3. The treatment of slip material, (chemically disengaged) with excess of hydrofluoric acid for 24 hours and further leaching with conc. hydrochloric acid do not affect the black pigment.(5).

However, the filtrate from HF and HCl leaching is positive for iron. This shows that slip has a ferruginous material.

This would mean that ferruginous material present in the slip might not materially account for the black colour of the slip, but may indicate the presence of some inert material like carbon which is unaffected by the strong chemicals.

4. The black residue, (left after the above treatment) on ignition with lead chromate gives off gasses which turn lime water milky (6).

This provides direct proof of the presence of carbon in the slip, which might be substantially responsible for the black colour of the Ware. (Refer above the views of Sanallah and Lal who too hold the possibility of deposition of Carbon in one way or another).



5. The black residue (obtained from the slip by the above referred treatment, washed and dried) was brought before a magnet and was not found to be magnetic.

The black slip even without any treatment, was found to be very weakly magnetic (7).

6. The black paint layer does not easily burn out with a blow pipe, unless treated with hydrofluoric acid, which probably loosens the bond between the clay particles and carbon paint and thus promotes oxidation of carbon (8).

7. During the burning out of the paint layer (as mentioned above), occasional sparkling is noted. This indicates also the presence of carbon particles.

8. The detached slip after ignition when carbon has burnt off leaves a buff coloured clayey residue.

9. The petrological examination\* of the slip material shows its anisotropic character. So the formation of glasslike substance as reported by Hegde (refer to his views above) could not be confirmed.

10. The observation of Bimson (refer above) that a razor will cut into Indian black (N.B.P. Ware), has the implication that the surface is neither covered by a glass like substance nor magnetite, since both of these have hardness of about 6 on Moh's scale. This may confirm our observations that neither there is a layer of magnetic oxide nor formation of glass.

\*This observation is by Dr. B.K. Das of Geology department of Banaras Hindu University, who kindly examined the specimen for me.



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CONCLUSION

On the basis of these examinations and investigations, we may tentatively suggest that black colour of the slip is materially on account of carbon and our experiments and observations do not substantiate the presence of magnetite or ferrous silicate.

Views of Lal mentioning the use of organic material which will deposit carbon on charring need attention. However in view of the presence of a detachable clayey slip, post-firing application of organic liquids looks doubtful. This slip might have been obtained by the application of well levigated emulsion of refined clay and organic liquids (say plant juices) over the dried pots. After the slip was dry, the pots were fired under reducing condition. The organic matter in the slip carbonized, without burning out, resulting in a uniform lustrous black surface.

FURTHER LINE OF APPROACH

Considering the colour variations of the slip etc. It must be admitted that more comprehensive study of this ware is necessary, so as to arrive at more useful results and to find out the method of fabrication.

Further work, on the study of the slip as well as body of the ware is in progress in our laboratory and thin sectioning of the N.B.P. ware has also been made, the results of this examination will be published shortly. It is also intended to carry out 'Differential Thermal Analysis' in conjunction with X-ray diffraction studies.

Considering the apparent resemblance of the N.B.P. Ware and Chunar pottery, as well as its pertinent location it is intended to study the work of the Chunar Craftsman.



The author is thankful to Professor L.K. Narain, Head of the Department L.I.H.C. & Archaeology, B.H.U. for his encouragement throughout this work.

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### NOTES

1. M. Sanullah, A. 1 No.1, 1946. p.120.
2. B.B. Lal, I.A. 1955-56. p.56 and I.A. 1959-60. p.120.
3. Mortimer Wheeler, Early India and Pakistan. p.30 et al quoting the views of Miss Bimson.
4. K. Hegde, Technical studies in N.B.P. Ware, J.M.S. 'varsity of Baroda, Vol.XI. No.1. 1962. Pp.159-161 and current science Vol.35, 1966 p.623.
5. Mellor mentions that excess of HF acting for 20 hours dissolved magnetite completely. It is more easily dissolved by HF than any other acid. He also states that powdered magnetite is completely dissolved in HCl. J.W. Mellor, A comprehensive treatise on Inorganic and Theoretical Chemistry. Vol.XIII, Part 2, p.758.
6. L.O. Shepard; Ceramics for the Archaeologist. p.221
7. Here it may be mentioned that magnetite is highly magnetic and will be affected even by an ordinary magnet. Other minerals of iron (e.g. hematite, siderite etc.) are also moderately magnetic and will exhibit magnetism with a stronger magnet. So slight magnetism is only shows the presence of ferreginous material and not magnetite.
8. L.O. Shepard, Op.cit. p.35.







THE NOTE ON THE PROBLEM OF THE PLAIN BLACK-AND-RED  
WARE IN NORTHERN INDIA

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Introduction

The problem of the black-and-red ware was first<sup>1</sup> discussed in a symposium organized by the Director-General of Archaeology in India in 1954, and thereafter many scholars like Sankalia, Subbarao, Wheeler, etc. have discussed this problem in detail. But in recent years the excavations at various sites, notably at Atranjikh<sup>2</sup>hera and Noh<sup>3</sup>revealed, for the first time the chronological priority of this ware over Painted Grey ware in northern India. In this paper I have attempted an evaluation of the problem of the distribution, form, and chronology of the plain black-and-red ware. An attempt has been also made to discuss the Aryan problem with different known ceramic industries.

Distribution and chronology.

The researches done during the last 20 years have revealed the occurrence of black-and-red ware from the different chronological horizons beside association in the megalithic context. On the basis of these latest researches we may group the black-and-red ware into the following cultural categories:

1. Late Harappa (C. 2000-1750 B.C.)  
Rangpur, Lothal and Desalpur.
2. Post-Harappan Chalcolithic Cultures (C. 1800-1000 B.C.) Ahar, Gilund, Navadatoli, Chirand, Rajar-dhipi,
3. Pre-Painted Grey ware (pre C. 1000 B.C.)  
Atranjikh<sup>2</sup>hera and Noh



4. Painted Grey ware and Historical period (from C.1000 B.C.) Hastinapur, Rupar and Khalau.

This black-and-red ware from groups 1 & 2 is painted with white pigment and was noticed for the first time in the riverine valleys of south-eastern Rajasthan<sup>4</sup>. Later on it was encountered even in the late Harappan levels at Rangpur and Desalpur in Gujarat<sup>5</sup>. This pottery further penetrated in the areas of Central India<sup>6</sup>, northern Deccan<sup>7</sup> and also in Tamilnad<sup>8</sup>.

This painted tradition on the pottery which has probably traversed from Central India, is further noticed in the belt of the Ganges in southern Uttar Pradesh<sup>9</sup>, Bihar<sup>10</sup> and West Bengal<sup>11</sup>.

The pottery from groups 3 & 4 is without any painting. This ware has been reported from the excavations and explorations in eastern Panjab<sup>12</sup>, Haryana<sup>13</sup>, eastern and northern Rajasthan<sup>14</sup>, western Uttar Pradesh<sup>15</sup> and other parts of northern India<sup>16</sup>. But from a majority of these sites, the other wares like black slipped and Painted Grey, were also noticed.

Forms

The basic forms reported from different excavations of the typical painted black-and-red ware, are bowls of different sizes and depth varying from thick to thin sections, although a few restricted types already current in alien wares, were also noticed. A few selected types from different sites are mentioned below:

1. B o w l

- a) Shallow bowl with external ledge (Ahar)
- b) Bowl with ridging near the edge (Ahar)



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- c) Bowl with pronounced carination and concave sides (Ahar)
- d) Bowl with a slightly raised rim (Gilund)
- e) Bowl or cup with outgoing sides (Navadatoli and Avra)
- f) Ovaloid and semi-circular bowls with rounded or carinated belly and indrawn short rim (Navadatoli)
- g) Bowl with corrugation near the top (Rajar-dhipi)
- h) Bowl with a tongue like-channel (Rajar-dhipi)
- i) Bowl on ring-base (Chirand).

## 2. D i s h.

- a) Dish (Gilund)
- b) Doubtful fragment of a dish (Navadatoli)

## 3. J a r.

- a) Jar with a short mouth and bulbous body (Gilund)
- b) Jar looking like a rimless batloi (Ahar)

## 4. B a s i n.

- a) Large basin shaped vessel with inturned rim (Ahar)

## 5. Dish-on-Stand

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- a) Dish-on-stand (Menar, lying between Udaipur and Chitor)

The whole complex is dominated by bowls and a few of its forms like carinated bowl found their way in successive ceramic industries but, at the same time, bowl with a tongue like lip seems to be derived in later phase from Malwa ware. This form also transformed in metal (hurdi) and can still be seen to be persisting in the religious repertoire of modern India.

The basic forms, as reported from the excavations of groups 3 & 4, are dish and bowl. This ware is made out of well levigated clay, thin section, turned on fast wheel and well-burnt under the inverted firing technic.

A few important shapes are described here:



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1. Bowl

- a) Bowl with a vertical sharpened rim (Hastinapur II early level)
- b) Bowl with a featureless rim (Noh)
- c) Bowl of large and medium sizes having featureless rim (Atranjikhhera)
- d) Bowl with slightly everted featureless rim (from nearly all the sites).

2. Jar

- a) Jar (Atranjikhhera)

3. Dish

- a) Dish with an inturned featureless rim and sagger base (from nearly all the sites).

This typological comparison between painted and plain black-and-red ware bespeaks itself. The forms of painted black-and-red ware (chalcolithic) were exclusively used by the other successive industries but not in the geographical limits of the plain black-and-red ware. Gaur thinks that black-and-red of Atranjikhhera has a genetic relationship with the painted black-and-red of Ahar and Gilund, but I have reasons to disagree with any such relationship on the following points:

1. The painted black-and-red bowls from Rajasthan have pronounced carination and concave sides and the fabric is also coarse whereas the bowls of plain black-and-red ware are featureless and comparatively of fine fabric.
2. The tradition of paintings on black-and-red ware was kept alive far in time and space from Rajasthan (ranging from C.1800-1000 B.C.) i.e. Madhya Pradesh, Deccan, Bihar, and Bengal, but it is significantly absent in the neighbouring areas, in eastern Panjab, Haryana, northern and eastern Rajasthan and western Uttar Pradesh.



3. The type dish (inturned featureless rim) is entirely unknown to the painted black-and-red users but was vigorously used in the region of plain and Painted Grey ware which is also the region of plain black-and-red concentration.

4. The types channelled or with pronounced carination bowl and dish-on-stand never found their way in the plain black-and-red region.

5. The Aravallies in Rajasthan has also checked the expansion of Aharians towards north and pushed them to south-east from where they got an out-let to enter in middle and lower Gangetic valley through Madhya Pradesh.

The forms in the plain black-and-red argue for a different source about the knowledge of the inverted firing and thus cannot be correlated with Ahar as postulated by Agarwal and Gaur. The bowls and dishes of plain black-and-red have a typological connection with Painted Grey ware and also reported together in excavations, so one can infer that the intrusion of Painted Grey ware was not far removed in time from plain black-and-red ware. Being technologically advanced, Painted Grey ware people easily superseded the users of the plain black-and-red ware and this is the probable reason that this culture lost its entity and for-  
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gotten in obscurity.

#### Aryan Problem

To identify a ceramic industry with Aryans is a problem and the answer is not clear cut in the terms of any particular theory. In the absence of written records, we may go on arguing about the role of different ceramic industries in equating with Aryans but truth may remain far from us.



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Anyway we know about Aryan movements from literary sources but the other items of this important community are still lacking. In the beginning 27 generations of the main families of Aryans lived in the area of Sapta-Sindhu (southern Panjab and northern Rajasthan) and later on made their conquest upto Yamuna. Before I may submit my provisional observations, the current views are also mentioned here:

1. Lal has identified painted Grey ware folk with the Early stock of Aryans. 22
2. Sankalia associated the Aryan movement with Aharians. 23
3. Sharma connected Aharians with the first wave of Aryans and Painted Grey ware as the second wave. 24

What is the position of the plain black-and-red ware vis-a-vis Aryans ? The following facts also bring this pottery very close to Early Aryans:

- 1- In northern India besides Harappan pottery only Bara ware, Ochre-coloured ware, plain black-and-red ware, black slipped ware, Painted Grey ware, etc. are found.
2. The shapes in plain black-and-red ware were entirely unknown to the other earlier or contemporary chalcolithic cultures.
3. The distribution of this ware has been noticed in the valleys of Saraswati, Sutlej and Ganga.
4. The place names as mentioned in Mahabharat also revealed plain black-and-red ware alongwith Painted Grey ware.
5. It is also possible that there may not be any difference between the users of the plain black-and-red and Painted Grey wares because the latter people can also pick-up the inverted firing technique in the course of migration. It is only at Atranjikhhera and Noh that black-and-red ware has been noticed



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from pre-Painted Grey ware horizon otherwise both are reported together. Possibility cannot be ruled out that Painted Grey ware habitat at Atranjikhhera may be later in date as is evident from the full-fledged iron industry. From Hastinapur and Alamgirpur limited use of iron is known.

6. The time limits of the plain black-and-red ware fits in well, if compared with Bogaz Keui inscription (C.1360 B.C. From the proper appraisal of this problem the excavations of a few selected sites in northern Rajasthan and eastern Panjab is a desideratum. The unearthed material remains might fill up the lacuna between the plain black-and-red ware and its users possibly Aryans !

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VEDIC LITERATURE ON POTTERY

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INTRODUCTION

The efforts aimed at bridging up the hiatus between the middle of the 2nd millennium B.C. to the beginnings of the historical period in cir 600 B.C. are directed in two distinct lines. One line of investigation, based mainly on literary data, has brought to fore-front several culture-groups such as Āryas, Vrātyas, Dravidas, Āsuras, Nishādas, Kirātas etc., many of whom have also been distinguished as separate ethnic-linguistic groups. It is in terms of existence, contact and cultural interaction of these groups that the historical reconstruction of the dark age, preceding the historical period, is being attempted by the followers of this line of investigation<sup>1</sup>. The other line of inquiry, having material remains as its evidence, has also successfully resulted in distinguishing separate cultural traits and groups, but its terminology, conditioned as it is by the nature of the data used, consists of Ochre-Washed Ware Culture, Copper-Hoard Culture, Black and Red Ware Culture, Painted Grey Ware Culture and so on. The pictures emerging out of these two parallel lines of investigation are encouraging in themselves, but they have, as yet, few points of correspondence despite the fact that they are treading a common ground in time and space and dealing with the same problem of socio-cultural groupings.

Perhaps, it would never be possible to establish complete congruence between these two pictures, for as earth has failed to treasure things other than material, literature too has relevance only to a few of the innumerable culture-groups, that occupied the Indian scene in the dark age before



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the advent of historical period, Nevertheless, more and more points of analogy between the two pictures may be searched for in order to bring out a better correspondence between them. The associability of Painted Grey Ware with the early settlers of Hastinapura, Mathura, Kurukshetra, Barnawa, etc. (viz., the Pauravas, Pañchālas, etc.) suggested by Lal<sup>2</sup>, the identification of Black and Red Ware with the early Āryans and P.G. Ware with later post-Rigvedic Āryans hinted at by Gaur<sup>3</sup> and the talk of Epic and Purāṇic archaeology started by Sankalia<sup>4</sup> are pointers in the right direction and need to be followed, verified and worked out further.

The present paper is an humble effort to analyse the pottery gleaned from the Vedic literature and to throw light on potters' technique as found therein. Hitherto, pottery types of early and late Āryan tribes are sought to be identified solely on the basis of their space-time context. It is hoped that detailed studies in the direction, followed in the present paper, may prepare a suitable ground where such pottery-identifications are checked and corroborated in the light of their typology and technique as well.

#### VARIOUS KINDS OF VESSELS.

A large number of vessels, made of various materials<sup>5</sup> and serving different purposes, are referred to in the Vedic literature. The general term for a pot is, of course, patra.<sup>6</sup> The word seems to have been derived from root 'pā' (to protect). Some scholars, including the authors of the Vedic Index,<sup>7</sup> however, derive the word from root 'pā' (to drink) which would indicate that originally the word was used only in the limited sense of 'a drinking vessel'.<sup>8</sup> Whatever the case, the term pātra had already acquired its generic connotation in the early Vedic age. Pātrī, the feminine counterpart of pātra is also present in the literature in the sense of a vessel.<sup>9</sup>



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The popular materials for making pots were clay and wood. Metals were also used besides gourd and leather. Bigger receptacles were sometimes made of dressed stone and bricks but these, like woven baskets and other viekered containers, constitute entirely different industries and fall out-side the scope of present discussions.

Wooden vessels, which were no less popular than the earthenwares in the Vedic age and which even later on predominated in sacrifices and other rituals, seem to have acquired a kind of sanctity. Vessels made palāśa, asvattha, varana and vikankata wood were considered to be specially pure. As hoary antiquity is generally the factor that leads to sanctification, it may be surmised that the Aryan societies passed through a gradual transition from wooden to earthen vessels which offers a striking analogy to the transition that they had in the field of architecture where it took a longer time to substitute wood by more stable media of stone and brick.

Among the wooden vessels, those of frequent occurrence in the literature under reference are Dru, Drona, Drona-kalāśa, Dronāhāva and Chamasa Dru was a popular wooden vessels in the early Vedic period.<sup>10</sup> It is specially mentioned in connection with Soma sacrifices.<sup>11</sup> According to Hillebrandt, it was the wooden vessel that was placed below the sieve to collect the flowing Soma juice.<sup>12</sup> This suggestion of Hillebrandt suits the etymological sense of the term derived from the root dru ( to flow ). Later on, it appears that the meaning of the term shifted from the pot to its material and Dru came to denote 'wood'.<sup>13</sup> It is in this sense that it occurs in compounds like drupada (wooden post), druhaśa<sup>14</sup> (wooden club?), etc.

Drona is another popular wooden vessel of the Vedic period.<sup>16</sup> Drona containing Soma are referred to at several places in the Rig-veda.<sup>17</sup> It appears to have been an open-mouthed vessel, like a trough, for alters are said to have been shaped sometimes as a Drona.<sup>18</sup> Donā and Dongā of to-day seem to have preserved the shape of the



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ancient <sup>19</sup>Drona. There were, however, other shapes in the Drona-variety of vessels. One was <sup>20</sup>Drona-kalasa which appears to be a large vessel used for stroing Soma and the other was <sup>21</sup>Dronāhāva which was a kind of wooden bucket for drawing up of water from wells.

<sup>22</sup>Chamasa and <sup>23</sup>Chamu both have been derived from the root cham ( to sip, to lick, to drink off ). Both these vessels are connected with Soma. Chamasa was the vessel from which Adhvaryu and hotri drank Soma at the time of sacrifices.<sup>25</sup> Right from the early Vedic period, it was always made of wood.<sup>26</sup> The Śatapatha Brāhmaṇa informs that it was made of <sup>27</sup>Udumbara wood. Later on, it came to be made of other kinds of wood as well.<sup>28</sup> Chamu was a vessel connected with the preparation of Soma, being either the vessel in which Soma was pressed or the trough in which Soma was collected from the press.<sup>30</sup>

Metal too was a favourite material for making vessels. <sup>31</sup>Ayas (metal in general and copper or bronze in particular),<sup>32</sup> Syāma Ayas<sup>33</sup> or Kārshnāyasa<sup>34</sup> (iron), Lohāyasa<sup>35</sup> or Lohitāyasa<sup>36</sup> (copper or bronze?), Hiranya<sup>37</sup> Suvarṇa<sup>38</sup> (gold), Rajata<sup>39</sup> (silver), Sisa<sup>40</sup> (lead) and Tapru<sup>41</sup> (tin) were the different metals. Vessels of different metals are referred to in the literature under reference.<sup>42</sup> The more popular of the metallic vessels of the Vedic age are Gharma and Kamsa. Gharma has been mentioned in connection with heating milk.<sup>43</sup> 'Pour in, O Milkman', thus runs an Atharvedic verse, 'the milk of the ruddy (cow) in Gharma,'<sup>44</sup> Although generally referred to as a vessel for heating milk, it appears to be the pot also for milking the cow, which sense of the word is indicated by its derivation from root ghri (to flow, to trickle). Kamsa too has been mentioned in the Atharvaveda in connection with cow-milking,<sup>45</sup> but it was mainly a drinking pot.<sup>46</sup> In the Śatapatha Brāhmaṇa, it is mentioned along with Chamasa, the wooden drinking pot referred to above.<sup>47</sup> Filled with Soma and other precious liquids Kamsa was a pot of great attraction to the eyes and a highly desired thing. It was really this that gave rise to its name Kamsa, a word



derived from root kam ( to long for, to wish, to desire).

Among the earthenwares of the Vedic period those met with more frequently are Ukhā, kalāśa, Kumbha, Sthālī and Kapāla. Ukhā has been mentioned at a large number of places in the Vedic literature as a pot for cooking or boiling things.<sup>48</sup> Although generally mentioned in connection with sacrifices, it was also a regular domestic pot and has been referred to even in connection with cremation.<sup>49</sup> It has been called mrin-mayī or made of clay.<sup>50</sup> It must have been made in various shapes and sizes but from the description of the process of its manufacture, given in the Satapatha Brāhmaṇa.<sup>51</sup> it appears to be a pot of flat base with sides raised up in layers.

Sthālī, the most common pot from the Vedic period down to the present day, has enormously changed its form and function. In the Vedic literature, it is referred to as a cooking pot<sup>52</sup> rather than a dish for serving meals. Sthālī-pakvamannaṃ (grains cooked in Sthālī) and Sthālī-pāka ( rice or barley boiled in milk) are referred to in the Brāhmaṇas and the Upanishads.<sup>53</sup>

Kalāśa,<sup>54</sup> and Kumbha<sup>55</sup> both were jars. They are generally used as synonyms, but their distinctive use at the same place in a verse of the Atharvaveda<sup>56</sup> indicated that originally some distinction was maintained between the two. A thorough study of the contexts in which these pots are referred to may reveal this distinction. Statistics, however, is in favour of indicating that Kalāśa was the jar in which Soma, water and other liquids were kept or stored<sup>57</sup> while Kumbha was generally used for bringing water from the well. In a verse of the Atharvaveda, water brought in a Kumbha is distinguished from other kinds of water, such as, that of the plains that of marshes and rain-water.<sup>58</sup> This difference in function is also indicated by the fact that Kumbha was easily broken.

Kapāla<sup>60</sup> denoted small bowl or cup of clay as also a piece of a broken jar or potsherd. It was so called because of its resemblance to skull. Besides their domestic use as lids, etc., the kapālas were



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employed in sacrifice too. The action of placing Kapālas in a prescribed order at the occasion of a sacrifice was technically called Kapālppadhāna.<sup>61</sup>

We have described above a few vessels that are met with more frequently in the Vedic literature. But there are many more of them and, as it is not possible to discuss them all in a short paper like this, only more important of the remaining vessels are being briefly dealt with here. Kunda (the ancestor of modern Kūnā)<sup>62</sup> was a vessel for storing water as is indicated by names or epithets such as Kunda-pāyin<sup>63</sup> (drinking from a vessel) and Kunda-pāyya<sup>64</sup> (descendant of Kundapayin). The vessel, Kosā, too, as is indicated by its name, was used as a storage. The large vessel, in which Soma was stored in the sacrifices, was called Kosā.<sup>65</sup> It is, however, also the name of the vessel by means of which water was drawn from a well.<sup>66</sup> This latter sense of the word soon became unpopular and we find that in the later Vedic period Udāñchana<sup>67</sup> is the name of the bucket used for drawing water from a well. The verbal root anch means to move, to rise or raise. The vessel which raised water from the well, therefore, came to be known as Udāñchana. Another vessel connected with water and well was Āhāva.<sup>68</sup> It was really the large open-mouthed receptacle which was kept near a well and filled with water for cattle. It is the action of drawing cattle to this water-reservoir (ahvāna from root hve, to call) that has given the name Āhāva to the receptacle.<sup>69</sup>

Pāñnejana,<sup>70</sup> as is clear from the name of the vessel, was used for washing feet (pād + anejana). Pāñhana<sup>71</sup> was a cooking vessel, from root pach (to cook). Amatra<sup>72</sup> was the name of the vessel into which Soma was served. It was derived from root am (to serve, to honour). Āsechana<sup>73</sup> was used for keeping liquids like yūshan (meat juice) and ghee (clarified butter).

#### VEDIC REFERENCE TO BLACK AND RED WARE?

There are several verses in the Atharvaveda which deal with the



removal of the effects of witch craft,<sup>74</sup> one of which runs as follows :

यां ते चक्रामे पात्रे या चक्रुर्निललोहिते ।  
आमे मांसे कृत्यां यां चक्रुस्तया कृयाकृतो जाहि ॥

AV, IV. 17.4

This verse has been translated by Whitney thus 'What (witchcraft) they have made for thee in the raw vessel (pātra), what they have made in the blue-red one, in raw flesh what witchcraft they made - with that do thou smite the witchcraft-makers.'<sup>75</sup> The word nīlahita in this verse has been rendered by Whitney as 'the blue-red one' but in Vedic literature, the word nīla stands for black or at the most bluish-black and not blue.<sup>76</sup> The word nīlahita, therefore, means 'the black-red one.' Now, what is meant here by 'the black-red one'? Commenting on it, Śāyana says : nīla (black) by the issuing smoke and lohita (red) because of the flames, it is Agni (fire) that has been called nīlahita.<sup>77</sup> This explanation of Śāyana does not seem to be correct in view of the fact that Agni has not been referred to by this name in the literature.

N.R. Banerjee suggested that the term nīlahita, in the above verse of the Atharvaveda, means 'bluish tined Grey Ware, as well as the brownish red ware, which goes with it and covers the same shapes, as found at Hastinapura and Ahichchhatra'.<sup>78</sup> Commenting on the suggestion, A. Ghosh rightly observed that 'a very literal translation of the term would be black-and-red (ware)'.<sup>79</sup> But a critical study of the verse under reference makes it clear that the word nīlahita does not stand for any pottery whatsoever. The same verse is repeated at another place in the Atharvaveda<sup>80</sup> with the only difference that in place of nīlahita we have miśradhānye (mixed grain). This may indicate that the term nīlahita stands for its substitute miśradhānya. The Paippalada or Kasmirian version of the Atharvaveda has sutra nīlahito<sup>81</sup> in place of nīlahite. This makes it clear that nīlahita stands for



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'the black-and-red thread.' These references have not been considered by Banerjee. As a matter of fact, nilalohita<sup>a</sup> in the Atharvaveda indicated either black and red thread or mixed grain. It can never be taken to mean gray pottery at all.

#### VEDIC REFERENCE TO HARAPPAN POTTERY-TYPES.

We come across several references to important pottery-types in Vedic literature. A funeral verse of the Atharvaveda<sup>82</sup> mentions a jar with four orifices and Sayana takes to be four<sup>of</sup> of the holes in the hundred-holed vessel.' This reminds us of the perforated pottery unearthed at Harappan sites. Another important pottery tradition coming down from the Harappan culture, viz., that of the knobbed-pottery is also preserved in the Vedic literature. Ukha,<sup>83</sup> which is indeed the most significant earthenware of the Vedic period, was a knobbed pot. The Satapatha Brhmana ordains that Ukha should have only four nipples (stannas) and neither two nor eight as made by some, for it represents a cow and those who make fewer or more nipples, their vessel does not symbolise a cow but a bitch or a ewe or a mare.<sup>84</sup> It is significant to note that knobs in both the Harappan and the Vedic vessels symbolise stannas or nipples in the context respectively of the Mother Goddess and the Cow.

#### TECHNIQUE OF MAKING EARTHEN VESSELS.

We have enough of references to clay, pot and potter in the Vedic literature. Clay, the material of pots, is called Mrid<sup>85</sup> or Mrittika.<sup>86</sup> Pots made of clay were known as Mrimaya-patra<sup>86a</sup> or Mritpatra.<sup>87</sup> The potter has been called Kulāla,<sup>88</sup> Kaulāla<sup>89</sup> and Mritapacha.<sup>90</sup> Not only this, the literature supplies us with interesting details about the technique of making a pot. These are found mainly in the Brahmanas and the traditions are carried on and described in greater details in the Sutra literature. Although, the making of these pots is described in connection with sacrifices, where every act is accompanied by ritualistic formalities and citation of mantras, it is not difficult to remove



the ritualistic jargon and see the simple details of potters' art. We describe below the successive stages in making of a pot mainly with the help of the Śatapatha Brāhmaṇa.<sup>91</sup>

Preparation of Clay: First of all, suitable clay was searched for. The search for clay, in the sacrifices, is accompanied with meticulous formalities. Although a potter did not observe any of these, we may presume that he took special care to collect clay suitable for making pots of durability and quality. Water was then poured into the clay. Resin of palāśa tree was boiled in water and added to the clay for firmness.<sup>92</sup> The clay was sufficiently mixed with water so that foam was produced.

Several things were then added to the clay to make the pot durable and good. According to the Śatapatha Brāhmaṇa,<sup>93</sup> goat hair (ajaloma) and powder of three kinds, viz. that of gravel stone and iron were added to clay. According to Taittīriya Samhitā,<sup>94</sup> however, postsherds collected from ancient deserted sites (armakapāla), sand (śarṅkarā), and hairs (Ajaloma and Krishnājinaloma) were to be mixed with the clay.<sup>95</sup>

Then followed the kneading with skill, strength and wisdom' and this continued for a sufficiently long time.<sup>96</sup> The clay was now ready for fashioning the pots.

Fashioning the Pots: A portion of the prepared clay was taken out, and in cases of hand-made pots, beaten to make it flat. This flat clay served as the bottom of the hand-made pot.<sup>97</sup> Then, other lumps of clay were similarly spread out by beating and sides were raised. The bottom has been termed nidhi. Raising of the sides was done in several layers called pūrvodohi, uttaroddi, etc.<sup>98</sup> Gurdles, bands and knobs were then made on the pot, if required.

Pre-Firing Surface Treatment: Before keeping the pots in the fire-pit, sometimes they were given a kind of surface treatment. A particular pre-firing surface treatment was known as dhūpana or fumigating



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the pot.<sup>99</sup>

Firing of the Pots: Thereafter, followed the act of digging (khanana) the earth to make a suitable pit for firing. The fire-pit was called

Kūpa.<sup>100</sup> The arranging of pots properly in the pit was known as avadhāna. Turning the pots in the pit was called paryyāvarttana.

Taking out of pots from the pit was known as Udyachchhana. Keeping out pots aside was called Nidadhana.<sup>101</sup>

Post-Firing Treatment: Pots were sometimes given post-firing treatment. According to the Satapatha Brāhmaṇa, the sacrificial fire-pan was given a post-firing treatment by pouring goat's milk into it. This action was called Āchchhrinana and was done to ensure durability of pot (sthāne).<sup>102</sup>

#### CONCLUDING REMARKS.

We have made a rapid survey of the various kinds of vessels in the Vedic literature. It has not been possible to trace out all the various vessels through out the literature and (gather details about their forms and functions, but what has been given is sufficient to demonstrate the mine of information on the subject available in the Vedic literature.

Form and function of different vessels are occasionally described or can be gathered from the context. Where it is not so, the nature of the pot may be made out by an etymological consideration of its name. So far as the problem of recognizing Aryan pottery is concerned, the pot names gleaned from Vedic literature should be compared with their counterparts in other Indo-European languages. This may give us valuable hints about Aryan pottery. Chemical analysis<sup>e</sup> of pottery obtained from recognized Aryan sites may fruitfully be made and result compared with the corresponding information in the Vedic literature.

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## FOOTNOTES

Abbreviations are: AA = Aitareya-Āranyaka; AB = Aitareya - Brāhmana; AV = Atharva-veda; ASS = Āpastamba-Śrauta-Sūtra; BU = Brihadāraṇyaka-Upanishad; CU = Chāndogya-Upanishad; GB = Gopatha-Brāhmana; JUB = Jaiminiya-Upanishad-Brāhmana; KS = Kāthaka-Samhitā; KSS = Kātyāyana-Śrauta-Sūtra; MS = Maitrāyaṇī-Samhitā; MU = Maitrāyaṇī-Upanishad; RV = Rigveda; SAA = Śāṅkhāyanāraṇyaka; SAB = Śāṅkhāyana-Brāhmana, also known as the Kaushitaki-Brāhmana of the RV; SAS = Śāṅkhāyana-Śrauta-Sūtra; SB = Śatapatha-Brāhmana; TA = Taittirīya-Āranyaka; TAB = Tāndya-Brāhmana; TB = Taittirīya-Brāhmana; TS = Taittirīya-Samhitā; VS = Vājasaneyi-Samhitā.

1. See, for example, Chanda, R.P. : Indo-Aryan Races, Prashahi, 1916; Chaudhari, R. : Vratyas in Ancient India, Varanasi, 1964; Leuva, K.K. : The Asuras - A Study of Primitive Iron Smelters, New Delhi, 1963; Banerji-Sastri, A. : Asura India, Patna, 1926.
2. Ancient India, Nos. 10 & 11, 1954-55, p. 151
3. Indian Prehistory : 1964, Poona, 1965, p.145
4. Purattva, No.1, 1967-68, Pp.1-3.
5. In a typological discussion on pottery, a consideration of pots made of other materials is also helpful as pot-shapes in one medium are found to have been translated in the other.
6. RV I.82.4; 110.5; 162.13; 175.1; II. 37.4; VI.27.6; AV. IV. 17.4; VI.142.1; IX.6.17; XII.3.25; 36; TS, V.1.62; VI. 4.1; VS, XVI.62; XIX.86; SAB, XXIV.8; 9; SB, I.4.2.13; IV. 4.24; XII.7.2.14; TA, V.2.13; AB, III.30 etc.
7. Macdonell, A.A. & Kieth, A.B. : Vedic Index, I.516.
8. It is interesting to note, in this connection, that patuki still means a particular small bowl-like earthenware in U.P. used generally as a lid to cover bigger vessels.
9. AB, VIII.17; SB, I.1.2.8; 2.2.1; II.5.3.6; 6.2.7; IX.2.1.1; XII.5.2.7; SAS, V.8.2.
10. RV, I. 161.1; V.86.3; VIII. 66.11.
11. Ibid , IX.1.2; 65.6; 98.2.
12. Hillbrandt : Vedische Mythologie, I.191-192.
13. TB, I.2.9.1.
14. RV, I.24.13; IV.32.23.



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15. RV, I.102.9; AV, VII.28.1. It may be noted here that the word luma (tree) is not referred to in the literature until the later period in the Shadvimsa Brāhmaṇa, V.11; Vedic Index, I.384.
16. RV, VI.2.8; 37.2; 44.20; IX.93.1; TB, II.4.7.2; TAB, XI. 5.1.
17. Ibi., IX.3.1; 15.7; 28.4; 30.4; 67.14; etc.
18. MS II. 4.7; KS, XXI.4; SB, VI.7.2.8.
19. Dongā is made by stitching leaves and is generally used for carrying sweets, etc. Dongā is both wooden and metallic and is used for keeping vegetables, etc. at dining table.
20. RV, VII.2.1.2; VS XVIII.21; XIX.27; SB, IV.3.2.6; V.5.11; 8.5; TAB, VI.5.1; 6; 7; 15; 18; 6.1; VII.17.32.
21. RV, X.101.7.
22. RV, I.20.6; 110.3; VIII. 82.7; X.16.8; 68.8; 96.9; AV VII.73.3; XVIII.3.54; VS, XXIII.13; AB, VIII.5; 8; 7; SB, I.4.2.14; IV.2.1.29; XIV.5.2.4; 5; 9.3.21; TB, I. 5.3.2; TA, VI.1.4.
23. RV, IX.6.5; 71.1; 72.5; 86.47; 96.20.21; 97.2.48; 103.4; 107. 10; 18; 108.1; TB. I.4.2.1.
24. चम्यते मक्ष्यते पीयते वा सोमः आस्मिन् इति चमसः ।  
Sabdakalpadruma, II. 433.
25. VS, VIII.37, ASS, XII. 24.11; 12; KSS, IX.15.5-8.
26. RV, I. 161.1; X.68.8.
27. SB, VII. 2.11.2.
28. पलाशाद्वा वटवृक्षाद्वा न्यवृक्षाद्वा चमसाः स्मृताः ।  
An unnamed authority quoted in the Sabdakalpadruma, II. 433.
29. RV, V.51.4; VIII.4.4; 76.10; IX.46.3; X.24.1.
30. RV, III.48.5; VIII.2.8; 82.7; 8; IX.20.6; 62.16; 63.2; 92.2; 93.3; 97.21; 99.6; 8.
31. RV, I.57.3; 163.9; IV.2.17; VI.3.5.
32. Lallanji Gopal has shown that ayas in Rigveda denotes simply metal and does not mean iron.  
Uttar Bhāratī, IX, 71.
33. AV, IX. 5.4.
34. CU, IV. 17.7; VI. 1.5.
35. SB, V.4.1.2.
36. MS, II.11.5; IV. 44; KS, XVIII.10.



37. RV, I.43.5; III.34.9; IV.10.6; 17.11; AV, 1.9.2; II.36.7; V.28.6; VI.38.2.
38. AV, XV.1.2; SB, XI.4.1.8.
39. AV.28.1; XIII.4.51; AB, VII.12.
40. AV, XII.2.1; 19; 53.
41. VS, XVIII.13.
42. For golden vessels, see, TS, V.7.1.3; TB, I.3.3.7; SB, V.1.2.19; 5.28. For silver pots, vide TB, II.2.9.7; III. 9.6.5.
43. RV, III.5.3.14; V.30.15; 43.7; 76.1; VS, VIII.61; AB, I.18.22.
44. AV, VII. 73.6.
45. AV, X.10.5
46. SUB, III.7.4.1; CB, II.6.7; TB, III.12.2.9; 4.7; TA, I.32.3; BU, VI. 3.1.
47. लौहम्बरे कसे चमसे वा SB, XIV.9.3.1.
48. RV.162.13; 15; III. 53.22; TS, V.1.6.3; SB, 1.7.1.10; VI.2.2.23-25; 5.2.7; 22.3.4; 6.1.22; VII.1.1.42; 2.1.5; 8.1.26; X.4.1.1; TB, III.2.3.2.
49. AV, XII, 3.2.3.
50. VS, XI. 59; TS, IV.1.5.4.
51. TB, VI. 5.1.1; 2.9.
52. AV, VII. 6.17; TS, VI.5.10.5; VS, XIX. 27.86; AB, I.2; 8; GB, IV.2.2.1; 3.1; 4.2; VI. 6.4.8; 7.1.24; XI.3.2.1; 5.1.13; XII.4.1.6; TB, II.1.3.1; III. 7.6.11.
53. SB, XIV, 9.4.18; GB; I.3.2.23; I.5.23; SAA, XI.4-6; AA, III.2.4; BU, VI. 4.18.
54. RV, I.117.12; III.32.15; IV.27.5; 32.19; AB, VI.11; SB, IV.5.10.7; TAB, IX.6.1; 5; GB, II.2.21.
55. RV, 116.7; 117.6; VII.33.13; VS, XIX.87; SB; SB, IV. 4.5.20; V.5.4.27; XIII.8.3.4; TB, II.6.43; GB, I.2.23.
56. रमां परिसृतः कुम्भ आ दधनः कलशैः AV, III.12.7.
57. AV, IX.1.6; IX, 4.15.
58. AV, I.6.4.
59. RV, X, 89.7.
60. AB, VII.9; SB, I.1.1.22; II.2.1.17; 4.3.8; VII. 5.1.2; TB, III.2.7.1; 3; 4; 6; SAA, II.2; Ta, V.2.13.
61. KSS, II.4.27-34.



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62. Kundā or Kunā is the popular name in U.P. of the large earthenware in which grains or water are stored. This is four to five feet in length and two to three feet in breadth across the centre.
63. TAB, XXV. 4.4.
64. RV, VIII.17.13.
65. Ibid., IX. 75.2; AV, XVIII. 4.30.
66. RV, I.130.2; III. 32. 15; IV.17.6.
67. AB, VII. 32; SB, IV.3.5.21.
68. RV, I.34.8; VI.7.2; I.101.5; 112.6; AB, II.33; III.23; IV.21; GB, II.3.30; AA, V.1.5.
69. Even to-day the practice of digging up a small pit near the well and filling it with water for cattle continues in villages. This pit has also been called Ahava.  
आहावः कुपसमीपे पशूनां जलपानार्थं कृतः स्वल्पजलाशयः  
Sabdakalpadruma, I.199.
70. SB, III. 8.2.1; 9.3.27; XII. 5.2.1; 2.2.
71. RV, I.162. 6; SB, VI. 5.43; 4; XIV.1.2.21.
72. AV, RV, II.14.1; V.51.4; I.42.2; X.29.7.
73. RV, I.162. 13; SB, II.1.9.5
74. AV, IV.17.1-8; 18.1-8; V.3.1-12.
75. Whitney, W.D. : Translation of the Atharvaveda Samhita, 1962, I.179.
76. This is clearly indicated by the substitution of the word nila in the Chhāndogya Upanishad with Krishna in the Kaushitaki Upanishad. Vide Macdonell & Kieth: Vedic Index, II. 246, fn.6.
77. धूमोद्गमेन नीलः ज्वालय च लोहितः। आग्निः नील-लोहितः  
Sayana on AV, IV.17.4.
78. Banerjee, N.R. "The Iron Age in India" in Indian Prehistory: 1964, Poona, 1965, p.193.
79. Ghosh, A. Comments on the above. Indian Prehistory : 1964, Poona, 1965, p.204.
80. AV, V.31.1.
81. Vide Whitney, W.D. translation of the Atharva-Veda Samhita I, p.180
82. AV, XVIII.4.30.
83. Supra, fn. 48.
84. SB, VI. 5.2.18-19.
85. TS, V.7.9.2; V8, XI.55; SB, VI.1;1.13; 2.34; 3.3.



86. VS, XVIII.13; AB, III. 34.2; TA, X.1.8.9.  
 86a. TB, 1.4.1.3  
 87. KS, XXXI.2.  
 88. VS, XVI.27, MS, 1.8.3.  
 89. VS, XXX.7.  
 90- MU, II.6; III.3.  
 91. SB, VI, 3.1.23 ff.  
 92. पणकषायनिष्पक्वाऽएताऽआपो भवन्ति । स्थिम्ने च्छ्  
 SB, VI. 5.1.1.  
 93. अजलोमैः संसृजति । .... शर्कराऽश्माऽयोरसस्तेन संसृजति  
 च्छ्  
 Ibid., VI. 5.1.4.  
 94. चिरकालश्च ग्रामे भूमौ अवास्थितानि पुरातनानि  
 Sāyana on Brāhmaṇa portion of TS, IV.1. अर्मकपालानि च्छ्  
 95. SB, VI.5.1.9.  
 96. Ibid., VI. 5.2.1-2.  
 97. Ibid., VI. 5.2.4-5.  
 98. Ibid., VI. 5.3.8-9.  
 99. Ibid., VI. 5.4.1.  
 100. Ibid., VI. 5.4.14.  
 101. Ibid., VI. 5.4.15.







SOUTH INDIAN POTTERY UPTO 500 A.D.

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The following paper on Pottery in South India upto 500 A.D. is mainly based on a study of the potsherds found in the course of the excavations conducted by the Department of Ancient History and Archaeology in the University of Madras at three sites in the Kaveri delta namely, Tirukkampuliur in the Kulittalai Taluk, Alagarai in the Musiri Taluk and Uraiur which forms part of the present Tiruchirappalli Municipal limit. The first two sites are early habitation sites while the third one is a site which was once the capital of the Chola Kings in the 'Sangam Age' in the early centuries of the Christian era. The sequence of cultures revealed by the excavations of the three sites belong roughly to the period from the 4th or 3rd century B.C. to the 10th century A.D.

The art of ceramic industry had reached a high water mark in the Tamil country particularly during the early centuries of the Christian era, for which the occurrence of fine black-and-red ware, the russet-coated and painted ware, the red-slipped ware besides the imported and imitational Roman potteries such as Arretine, the Amphorae and the Rouletted ones in a number of sites in South India fully bear evidence. There is no doubt that the pottery industry had made its appearance even in the Neolithic-Chalcolithic phase of South Indian Prehistory in sites like Brahmagiri, Tanganakallu, Maski, Tekkalakota and Paiyampalli;



## 2.

but it reached perfection and sophistication only in the Megalithic period, i.e. in the centuries before and after the beginning of the Christian era. The major ceramic industries of the period are the black-and-red ware, russet-coated and painted ware, red-slipped ware, black polished ware etc. Strictly speaking the black-and-red ware occupies a unique position in the history of ceramic art in South India.

Black-and-red ware:

This was the characteristic ceramic industry of the Megalithic culture of sites. It has been found not only in the Megalithic burials but also in the megalithic occupational levels. In South India, sites like Arikamedu, Brahmagiri, Chandravalli, Sengamedu, Sanganakallu, Maski, T. Narsipur, Tirukkampuliyur, Alagarai, Kanchipuram, Kaverippumpattinam and Uraiyur are some of the noteworthy places of ancient culture which have yielded a large volume and variety of this ware enabling scholars to make a detailed study of different aspects of it. The most important aspect of the pottery relates to the method of firing it in the kiln. It is placed in an inverted position (one above the other) in the kiln and fired. The interior and a portion of the top turn black due to firing under reduction while most of the lower outer portion is fired under oxidising condition, i.e. having access to the oxygen and thus have a red or brown colour. Slip has been applied on both sides. It is generally turned on a fast wheel; salt glazing is also at times applied to this type of pottery which gives a shining but a crackled surface to the vessels. But on account of constant burnishing also the pottery gets a



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lustrous surface. Painted designs executed in Kaolin, incised and impressed patterns of various kind, and graffiti marks are met with in this pottery both inside and outside.

The shapes in the black-and-red ware indicate that they were mostly for utilitarian purpose. A variety of shapes are encountered, though the majority of them are bowls. Several types can be seen even among the bowls with straight, globular or spherical, concave or convex sides, with rims of different varieties. The other shapes that are seen in the ware are globular pots with short neck or bottle neck, basins and carinated vessels and a large number of dishes both deep and shallow. A peculiar type is the dish-on-stand with black inside the dish portion and red on the stem of which few pieces have been found.

The origin and date of this pottery is a matter of great controversy among scholars; however on the basis of the evidence obtained from excavations it may on sure grounds be assigned a date between c. 500 B.C. and c. 500 A.D. in South India. Its beginnings in South India may go a little earlier, by two or three centuries.

Russet-coated and Painted ware

This is one of the most interesting varieties of pottery in South India which bears kaolin paintings on the red ochre-washed surface. After the pot was made and dried leather hard, the russet-coating or ochre wash was given. Then they were dried and the painting in kaolin was made with a variety of designs. The pot was fired in the kiln evenly. The paintin after firing took a high polish, shining



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like glass. The shapes in this ware are again mostly bowls with different kinds of rims, such as beaked, rounded, bevelled or featureless ones. The high necked convex bowls with narrow mouths, globular pots, flat and shallow dishes with slightly incurved or vertical sides sometimes with a carination on the profile are also met with. The painted designs are horizontal and vertical bands, wavy lines, arches and curves, concentric circles, oblique lines, criss cross and lattice patterns and chevrons. Dots in various forms also occur on the shores. Though on the basis of the excavations at Brahmagiri and Chandravalli, this pottery is to be dated roughly to about 50 A.D. to 400 A.D. the evidence from Tirukkampuliur may push the date of this ware to atleast a few centuries before Christ. Graffiti marks are also found on this variety of pottery. In most of the sites this pottery occurs along with the black-and-red ware.

Black polished ware:

This has a fine surface and thin section. It may even be called one of the varieties of the black-and-red ware. It is fully black with high polish. It is often compared with the Northern Black Polished ware (N.B.P.) which has similar characteristics. In date it belongs to the black-and-red ware group.

The shapes are mostly those of flat dishes with straight or incurved rims, varieties of deep and shallow bowls with straight or convex sides and carinated vessels. They are mostly similar to those of the pottery of black-and-red ware. Besides, pots with long neck and flaring mouth and several types of lids also occur in this ware. It is



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generally devoid of any ornamentation but moulded bands and sometimes decorated leaf patterns occur on the outside of the pottery.

Red slipped (polished) ware:

In the later levels of the earliest period is seen the gradual appearance of a fine red slipped pottery consisting mainly of pots with different types of rims. This is found to continue in the next period and seems to have been in large use.

Brown slipped ware:

Associated with the red polished ware mentioned above occurs another ware with a brown slip both inside and outside. The shapes are mostly bowls and dishes with stray occurrence of pots. It can be grouped with the red polished ware datable to about the same period.

Red slipped ware with decoration:

It has slip on one or both sides with high polish and fine texture. A large number of incised decorative designs are found on the rim portions of the vessels of this ware besides graffiti. It is slightly later in date and may be ascribed to about 400 or 500 A.D. and after.

Besides the above mentioned indigenous varieties of ceramic wares, imitational as well as imported varieties of Roman wares such as Arretine, Amphorae and Rouletted ones were also in use in some parts of the country, indicating the cultural and trade contacts with the Roman empire in the early period.



Graffiti Marks:

The graffiti marks are mere scratches found on the potsherds of the period. These scratches consist of different symbols which are variously interpreted by scholars as 'owner's marks', 'potter's marks', 'marks of authority or organisations' etc. Though Yazdani long back catalogued and studied many of these graffiti marks, no satisfactory explanation or interpretation has been given to this problem so far; recently Lal has shown that these symbols have close similarities with comparable pottery marks from the Chalcolithic and still earlier Harappan cultures. However in the light of the fresh discovery of numerous graffiti marks in the course of the excavations at sites like Tirukkampuliyur and Alagarai an attempt may be made to give some reasonable explanation for the occurrence of graffiti symbols like the Sun, moon, star, river, mountain, tree, trisula, swastika, etc. which probably pertain to the religious beliefs and practices of the people in those days. They indicate that forces of Nature were worshipped; yet another view is that these graffiti symbols may also represent totemic symbols of the tribal peoples who lived in different parts of the country during the period under review. These graffiti marks are, as mentioned earlier, found engraved on black-and-red ware, russet coated ware and red polished ware sherds. Some of them are found on punch-marked coins also.

Inscribed pottery:

Inscribed pots and potsherds have also been found in the earlier levels of the excavations of Arikamedu, Alagarai and Uraiyur. The pottery is usually of the black-and-red ware and red polished ware varieties. From the



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nature of the pottery, the levels in which the potsherds have been found and the associated finds they may be assigned to the 1st and 2nd centuries A.D. Palaeographically also the inscriptions can be assigned to the period. The script of these inscriptions is the Brahmi of the Dravidi variety and the language is Tamil with an admixture of Prakrit words in a few inscriptions.



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"THE HARAPPAN CERAMIC WARES AND THE DEVOLUTION OF  
THE HARAPPA CULTURE"

By

S.R. Rao

We all know that the Harappan ceramic wares are uniform throughout the vast region covered by the Harappa Civilization, but underlying this uniformity certain regional variations in fabric and typology are becoming increasingly clear in Gujarat and, to some extent, in the Sutlej-Ghaggar basin also. It is therefore necessary to distinguish the Harappa wares (those types and fabrics which are common to the Indus valley cities and other mature Harappan sites outside the valley) from the associated 'local' wares such as the Black-and-red ware and Micaceous red ware of Surashtra, and the Incised ware of the Sutlej valley. Another point which should be carefully considered is the line of distinction to be drawn between the Indus style, or to use another term, the "Imperial style" of painting earthenware, from the Provincial Style. In Gujarat, which was a maritime province of the Indus Empire the Harappans developed a new style wherein animals were drawn in a more realistic way than in the Indus style. Very often folk tales such as the story of 'the cunning fox and the crow' formed the subject matter. This style is more pleasing because animals and plants are highly realistic and the artist has avoided monotony and overcrowding of space usually resulting from a repetition of designs.

In the case of certain Harappan sites outside the Indus valley it is observed that all the major Harappan ceramic types such as the goblet, beaker, dish on-stand, dish with projected rim, S-shaped vessel, small-necked jar



with a bulbous body, perforated cylindrical jar and trough or basin, occur in the sturdy red ware, as well as a buffish red ware. The latter fabric is not indicative of any new cultural stream. On the other hand, the Archaeological Chemists' report, both in the case of Rangpur as well as Lothal, clearly says that the buffish colour of the pottery is due to the incomplete oxidisation of the lime-contents of the clay. As such the occurrence of a buff ware or buffish red ware at Harappan sites need not cause doubt as to the maturity attained by the culture, so long as the types are characteristically Harappan and other Harappan artifacts are found at the site. The colour of the ware depends on the clay used and the conditions of firing also. It is therefore wondered whether the classification of the Kulli, Amri-Nal, Quetta and other cultures into Red ware and Buff ware cultures has any rational basis. Wheeler has also doubted it. I would like to raise one more question about the associated wares. The black-and-red ware found at the Saurashtrian Harappa sites are anterior in date to the central Indian chalcolithic black-and-red ware. As matters stand at present, we must consider the indigeneous people of Saurashtra who used the Micaceous Red Ware (with its characteristic bowl with or without a stud-handle) as the authors of the black-and-red ware which now serves as a link between the Harappa and post - Harappa chalcolithic cultures on the one hand and the Megalithic culture on the other.

As a sequel to the discovery of a number of Late Harappan sites in the Indo-Gangetic basin and Gujrat, it has become necessary to distinguish the Harappa wares from the degenerate Harappa wares. Apart from the inferiority

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of the fabric (firing, surface-treatment and decoration) the absence of certain true Harappan ceramic types such as the pedestalled goblet and beaker and the presence of the pointed goblet should be taken note of. The so-called Ochre-coloured-Ware which is suspected to have been associated with the 'Copper hoards', is in reality the ill-fired Harappan red ware used by the Harappa refugees in the Western Gangetic valley as they moved out of their original home. In Saurashtra and the Narmada estuary also the degenerate Harappa ware occurs at a large number of Late Harappan sites. The report on the excavations at Rangpur makes a clear-cut distinction between the mature and degenerate Harappa wares. It is high time that on the basis of ceramic evidence obtained we designate the Harappa sites recently found in Meerut, Sahranpur and Ludhiana districts including Bara, Alamgirpur, Ambkheri and Bargaon as Late Harappan settlements instead of calling them as Harappan.

Then comes the question of the devolution of the Harappa Culture. It is abundantly clear that the Lustrous Red Ware Culture of Gujarat was evolved in two stages from the mature Harappa Culture. Some of the evolved Harappan ceramic types like the high-necked jar and carinated bowl are found in the upper Narmada valley, Godavari, and even in the Tungabhadra valley. You will all be surprised to know that the diffusion of Harappan technology can be traced now as far south as Singanapalli, Ramapuram, Sevaram and other sites in Kurnool district. My exploration (only a fortnight ago) has confirmed the existence of a neolithic people who had borrowed certain Harappan techniques. They used perforated jars, the bowl with



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featureless rim, the high-necked jar, the stemmed bowl (with a lustrous red surface) and more than all the disc-beads of steatite and parallel-sided blades, all characteristic of Late Harappan sites in Gujarat. They are found to have painted the hand-made wares in a typical Late Harappan style (Lothal B) with wavy lines in groups, cross-hatched panels, Zigzags and loops. In view of the fact that some of the Neolithic sites in the Deccan are dated as early as 2300 B.C. and the Neolithic-chalcolithic settlements of the Tungabhadra Valley flourished in 1800-1200 B.C. period it is quite probable that the Harappan technologists moved down to the south from the Narmada-Tapti valleys in the late-or-post-Harappan period to the Deccan wherefrom they used to get gold and steatite formerly. Further investigations in this direction are in progress.

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"I am in this locality of Malviya Nagar, on the outskirts of the city of Delhi for the last nine years; and every year I purchase water-pitchers in the local market which is fed by the traditional potter-houses from villages almost within a radius of seven kilometres. On the 4th of April 1968 at about 8 A.M. when I heard the voice of a hawker of the earthen vessels, I felt like buying one here rather than going to the market. I did that for just fifty five paise but with a little dialogue with the vendor.

"What is your name?"

"Devī Ram, and I come from Chirag Dalli, just two km. from here" was his prompt reply.

"Is that so; then one day I would like to come to your house and see you working" I said "Why not, do com' Babu ji" "Your pots are beautifully painted but tell me why is that that the design over them is the same as it was years back, really I don't see any change in it. Can you not draw other floral and faunal designs?" I enquired of him.

He laughed a little and replied in a soft voice, "You have rightly observed so, but let me tell you very frankly, it really does not occur to us that we should paint differently. Painting is usually done by women at home who have always to do so much in the house that quickly they want to do the job and finish with it. They are now so adept in preparing this design that believe me in an hour or so, one woman can paint upto forty pitchers! "With a little pause and smile he added "Don't think that our women cannot paint a tree or parrot or peacock or even men, they do all these on the walls of the house on Karwa Chauth and other festive occasions like Bindi, but that is a different story. With the every day pottery they can't devote more time. And then what if, even they paint them differently and more beautifully the pots are not going to fetch more money. You are the first person who is taking so much interest in it, for others it is just a water-vessel, it is sold for a higher price not because it is better painted but because it is bigger in size and accommodate more water. Come some day to my house, it is quite near!" saying so he whipped the donkey and went ahead followed by his five year old child in rags, weeping and crying.

The whole thing gave me a jolt. As I relaxed in my chair questions flowed in from all directions, and I was getting agitated for their answers.

Here is a man who tells me that a pitcher is painted in less than two minutes; how can it then be an art in the real sense. For the last nine years not a single item of the design has changed; what a conservatism! Will they ever change? Will these forms and designs ever give place to new ones? Not the paintings but the size of pots determine the price line, and it is the price line that determines the amount of time and energy the potters would like to put in in making the pots. The carriers of the pots are donkeys even in 1968! The potter's son is in rags; the father cannot afford new clothes for him. Why are they so poor?

"It at once became clear that with pottery, are associated some of the vital questions of socio-economic life of the people." In examining the voluminous ethnographical literature describing the manufacture of pottery, one notes with surprise how little attention has been paid to the social, cultural, and economic settings in which the work is done. Most descriptions deal with techniques and processes of manufacture and with design elements." Writes G.M. Foster (Ceramic and Man, London, 1965, "The Sociology of Pottery: Questions and Hypotheses Arising from Contemporary Mexican Work, p.43) in a regretting tone. It is really true, that "beyond telling which sex makes pots, most accounts reveal little about such things as the status of the potter in his or her society, how potters look upon their work artistically and economically... the process that contributes to stability in a tradition, which make for change, and which may be involved in the dying-out of a style.....from the standpoint of archaeological interpretation, these and other "sociological" points are just as important as are styles and construction methods." (Ibid)



In order to find out the answers of these questions, next day early in morning I visited the house of Devi Ram in the village of Chirag Dilli. There are about 10 more houses in the row Devi Ram has his house. It has two rooms and a big back-yard in which he has his work-shop in the open with a partially underground open-kiln. I also met Sri Banwari Lal and a dozen other potter men, women and children - the oldest of them, about 64 years old Kuda Ram was extremely helpful in answering questions. The results of my investigations are as follows:

The village attracted different people from neighbouring places only in 1857, purely for safety reasons, since the war of Independence was fast spreading. Their family also came from a village about 40 km. from here. For the last 60 years Kuda Ram has not seen any change either in painted designs or in pottery shapes. According to him the pigments come from the following sources:

(1) Red for an overall wash comes from Lal Kuan, at a distance of about 8 km. It is the disintegrated quartzite with a high amount of iron, used as bajari for the pavements along the Delhi Roads. In a vessel it is soaked in standing water about 16 cm. higher than the level of the raw material. After repeated stirrings for 2 or 3 days, the quartz particles settle down with fine red silt and red water over the whole deposit. This is used as colour.

(2) White for making designs comes from Basantpur and Mahipalpur, about 12 km. from the village. Here there is white kaolin deposit.

(3) Black for preparing designs comes from Alwar, about 140 km. from Delhi in Rajasthan. It is from the rock deposits and is mineral. Thus all these pigments are minerals.

Peculiarly enough, the black point on the pot purchased was so soft that on a slight touch it was removed with a trail of black streak. Was it a case of post-firing painting, as we the archaeologists may conclude? No, it was not. It was the usual case of pre-firing painting. The reason for this anomaly was given to me like this: "Use it for two days and it will be alright." Once it is soaked in water, it is permanent. He was right. The mineral particles which could not penetrate the pores, got in with the capillary action. Let us now re-examine the Neolithic - Galcolithic grey ware of the Deccan with 'post-firing paintings' in the light of his observation.

The sources for the pigments also show the same, the paints used are inorganic and come from a distance. Even the industry of pottery is not solely local in character; it has to depend on long distance commercial contacts for the raw material. A study of pigments and their place of origin for determining the nature of trade and commerce in this new field and cultural contacts through it, might change our ideas regarding the dynamics of pottery in the past.

Once the colours are thus collected, now-a-days from regular dealers, the black @ 5 paise a kg., white @ 20 to 25 paise a kg. and red is brought on donkey backs, the paints are prepared in water and the actual work of painting done. On the technological grounds I asked Somvati, 15 years old girl from the neighbouring potter's house as to how she paints two wavy lines making a running chain. She was amused at my ignorance, laughed a little, and then picked up a 'two-in-one brush' lying in a corner. "Look here Babuji, in a short single handle of a stem twig two tails of hair are tied up. Both are dipped in colour and then used simultaneously as a single brush; with a little swing in the hand, the chain is produced in a few seconds". And then she demonstrated it to me.

Devi Ram then took me to the kiln and the heap of cow-dung - to be used as fuel and said, "Now-a-days the cost of cow-dung has considerably gone up and the profession is not at all paying. Even the clay has to be purchased @ Rs. 50/- a truck".

"But then why not change over to other methods of firing?" I asked him.

"One we did it using sawdust in place of cow-dung but probably, it could not retain the temperature sufficiently long and the pots were not of standard baking. It was a dead loss. Qdly, we reverted to our old ways." He was right, pottery-making is a tricky affair, and there are literally hundreds of points at which a slight variation may adversely affect the result which may mean that a week or a month's labour is in vain. Economic security to him lies in following the tried processes. He becomes traditionalist.



But in recent years, with some of the potters in the city these forms have changed and so the designs. The new types can be found in big shops visited by the foreigners, e.g. the Cottage Industries Emporium in Cannon Street Circus. Similar changes have been observed in Mexico also. Foster ascribed them to the demands of the market, (Ibid. p. 52-53) and not to the genius artist who experimented for pleasure sake? Although it is true that in modern times demands of the tourists induce the dealers to ask the potter's for new types but in the remote past such artificial demands were hardly there. The stimulus largely came either from the patronage of lay-lords or abrupt inflow of a new people or new social or religious functions or all in one. It is a complex process and it gets a big push when it becomes commercialized and a single centre of production starts feeding different market.

Basically, the painted pots are of two types: One has only plain broad band made with the help of a piece of cloth, and the other has intricate geometric designs made with brushes. However, the shapes and the designs remain the same. The reason given for it was revealing: "the former is meant for the Muslims and latter for the Hindus. The Muslims feel that we use pig-hair for the brushes, although it is wrongly assumed, now we use only the hair of the tail of jhatikar a wild small animal, still they do not purchase the painted vessels." In fact before this enquiry I never knew that earthen pots have their separate religions, and they are divided into the Hindus and Muslims. This communal aspect of pottery bears great possibilities in our objective studies in the sociology of pottery so far as it concerns the effects of religion on pottery, probably, can be used as an important source of informations by social historians.

While moving in the courtyard, I observed that some of the water-vessels have short necks while others have comparatively high ones. The reason given to me was again quite interesting from the sociological point of view "Sir, the vessels with short necks are for the local population while those with higher necks are for the Punjabis who have come from Pakistan soon after the partition" explained Devi Ram, "The local women arrange their vessels one above the other when they lering water from the well, but the Punjabi sisters carry them on their hips. For the former the height of the neck is immaterial but for the latter it is of prime importance, the four fingers must conveniently support the pitcher with its neck." It is an interesting evidence of pottery giving clues for the study of different social groups in a society, each having its own habits of the way of using the pots. We, the professional archaeologists divide our pottery first into major types and then each one of them into sub-types, calling them 'variations'. The basis of the sub-types is variations in the profile and the section. Although we do indicate these variations we have never tried to interpret them in terms of social-structure and group behaviour, which a social historian would very much like to understand and in which studies in pottery can contribute a lot.

Dev. Ram is quite energetic and takes his goods to other localities also. But when I asked him to name them, I found that none of them is beyond 6 to 8 km. from this village. "only this much of distance can I cover in a day as a hawker" Was his reply. "Although on festive occasions I take my things even to Chandni Chowk, about 20 km. from here, because the capacity of the local markets is limited for the mass production of these days, but that is only once in a year; after all it involves three days of our being out of the house, staying in the market even during the night."

"But can you tell me the longest distance from where pottery comes to Delhi?" was my question. He thought a little while and then said, "Gurgaon in Hariyana, about forty km. from where pots are brought in carriages drawn by horses or mules. Normally, we want to finish one transaction in a single day and return home the same night; and it is only rarely that we stay over-night."

"But then is there anyone in your knowledge who is more adventurous?" I asked him. "There used to be one" said another potter standing near by, "He was then unmarried. He could go upto Brindaban, some 100 km. from Badarpur, his native place. But then don't think that all the way he carried the pots made in his house. He was no more a potter. He became a trader. His own goods, he will sell in the first market he goes, and then purchase a new stock in the village for the next market, and so on. But it could not work for long. The carvings were not proportionate to the trouble taken, after all potters are every where".



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These answers are very revealing so far as they are concerned with the problem of diffusion of potteries. The actual manufactured earthen pots can hardly travel long distances, with probably, a single exception. Certain types which serve some religious purpose may travel with devotees, as the tin bottles for the Ganga water travels all the way from Varanasi to Rameshwaram. In the past a few Northern Black Polished pots travelled upto Amravati and Nasik, probably, as religious were used in specific rituals. We are, therefore, pressed to think that in our archaeological interpretations regarding the diffusion of potteries over long distances, the mechanism of trade and commerce played a part certainly, but not much. Wine vessels like the amphorae constitute a different variety called 'trade-potteries' and not house hold ware. The house hold wares move only with the people, and migrations are certainly involved there.

The problem of diffusion of the paintings is closely related with the entire group of pots in a pottery. Since it is done by women, the marriage pattern plays a great role in it.

"How far is your father-in-law's house" I asked. Devi Ram.

"It is in a village near Ballabhagarh, some 30 km. from here" replied he, "we cannot afford going to far off places. All our near relatives live in villages within a radius of 60 to 70 km."

Obviously, the painted designs should normally show distinct changes beyond this radius and if they do not show it, the act of migration of people should well be thought of. Probably, too much credence has been given to the Wheeler's dictum of 'ideas have wings' and it is used and abused in all circumstances wherever we want to give short-cut explanations without toiling hard to work out the problems in a details.

As a matter of fact, basic techniques of levigating clay, wheel-rotation, firing incision stamping, moulding, burnishing, wash, slip, etc. travel more widely with 'wings' than the pot forms and designs which are more homogeneous and group-oriented and, therefore, afford a sounder basis for regional studies. I, therefore, make a plea for sociological studies of contemporary potteries round every excavated and explore site first and then extend it in towns and villages, so that as we understand ancient India in terms of regional potteries so we may understand modern India too, one being the preface for the other. Probably, a beginning has been made by Sri Baidya Nath Saraswati of the Anthropological Survey of India.

My further queries centred round the social status of the potters. "What social status, Sir, we are hardly equal to an agriculturist. We might not be untouchables like cobblers and scavengers but our work is with clay and cow-dung and, therefore, dirty. We do it because we can't do any thing better. We have no land; in fact very few of our relatives are having some land, but that too does not raise the status. First of all, the rigid caste system does not allow us to rise above a particular level in the line of hierarchy and, secondly, as a group our economy is at a very low level." That was the reply of Devi Ram. Almost similar answers were given to Foster when he interviewed some potters at Tzintzuntzan in Mexico. One of them said "ES NUESTRO DESTINO" (It's our destiny) (Ibid, pp. 49-50.)

But while I discussed this problem with B.B.Lal, the latter pointed out to me that today we are all in the metal age and, therefore, the role of pottery in our life is much less than what we can imagine in a non-metallic context. It is a very pertinent point and I wish someone gets an opportunity to work out the status of potters in societies not still using metallic pots and pans.

Closely connected with it is the problem of marketing. The potter has to orient his product according to the demands, but it is equally conditioned by the monetary return. The demands are various because the needs are various-cooking, religious ceremonies, containers, etc. Similarly, the return is also different. While a water vessel is sold for 50 paise, a much smaller but sturdier milk-pot is sold for 75 paise. In the courtyard I saw both the types painted equally well, but the paintings on the latter was more elaborate and the reason for this given to me by Devi Ram lies in this differential monetary return, rather than in any thing else.

But in spite of it except, probably, very few, the paintings do not rise to the level of art. It is artisanship. It has degenerated to a 'job in the routine'.



No pleasure is derived out of it. It is just a profession for earning livelihood. Value is attached to the size than to the paintings.

This is the real reason behind conservatism in pottery shapes and designs. And I have a feeling that in places where the pottery types and decorated designs are stable over a longer period seen in the archaeological context the art of pottery had degenerated to artisanship. The reason in all probability was 'lower monetary return' from the sale. If that were so, the social status of the potters in most of the societies, even in the remote past, must have been awfully low. The Harappan potters status could not be very high.

E.A. Hooton (Up from the Ape (Rev 'Ed') N.Y. 1946, p.338-339) once said "When different peoples come into contact, they may fight, but they will always breed." But can this intermarriage be recognizable in the pottery of a single site? Solheim gave a good example to show that it is recognizable. In a burial site of A.D. 600-1100 in the Sarawak delta of Borneo he discovered that 'for a brief period, pottery forms, especially the handles, were copies of Chinese types but were made locally. The handles did not adhere well to the vessel walls, and their production soon ceased. In the local historic situation, women have traditionally made the pottery and Chinese men have often come into the area and married local women. Solheim suggested that perhaps the local wives struggled to imitate Chinese styles in a technique unfamiliar to them and that subsequently local born offspring had no interest in the Chinese styles, which soon died out'. R.W. Ehrich, "Ceramics and Man: A cultural Perspective", Ceramics and Man, London 1965, p.7. H.J. Fleure (1962) wrote, "Early arrivals (perhaps Roman mercenaries and migrants escaping slave pressure) were sometimes young men who took to wife native women, so that one gets Roman features on Saxon pots" (Ibid).

Such hybridization in pottery forms and designs are visible in the 'areas of overlap' in India also. e.g. in Maharashtra the Southern Grey Ware shows elements of Northern Chalcolithic types and designs; recently S.B. Deo found some Malwa type designs on a local pottery near Nagpur (personal communication). I do not know if Malwa Charnet-spouted bowls can also be included into this category. So also may be the case with Painted Grey Ware, Northern Grey Ware and N.B.P. Ware. Examples from contemporary history may be found out. One has to work it out and see if Solheim's observations can be applied in all these cases also. Cross-breeding in human society resulting in the hybridization of pottery forms and designs is a very interesting observation for sociology of pottery dealt by ethnologists and archaeologists alike.

As I was leaving the place for my return journey I enquired of Devi Ram if his pottery forms and designs will ever die out or they have taken a dose of Amrit, nectar, and shall remain so far ever.

He laughed a lot and said, "They may die out but not with me, but perhaps with my children, who have started going to schools and aspiring for becoming 'babus' like you!"

Is he not right?

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THE NBP WARE - FRESH HYPOTHESIS IN  
THE LIGHT OF SRAVASTI EVIDENCE.

by

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At Sravasti <sup>deposits</sup> of three successive cultural periods were encountered. Here we shall be concerned with evidence recovered from the earlier two periods. The position is briefly as follows:

In the Period-I white <sup>ch</sup> is pre-defence habitation, NBP ware occurs in prolific numbers and diverse shapes. PGW-are specimens, though extremely restricted are also recovered from this period. All the specimens are undoubtedly of the same category as the PGW specimens from Hastinapur. What is extremely important is that the plain red ware shapes associated with the NBP-PGW phase have very many common types with the Hastinapur Period-II (PGW PHASE). Conversely, the NBP associated Red ware types as known from Hastinapur and Rupar are totally absent from NBP ware associated <sup>deposit</sup> there at Sravasti; but are represented in the post-NBP phase at Sravasti which is Period-II. So are the thick and coarse grey ware types which <sup>are</sup> characteristic of the post-NBP phase at Sravasti. The ~~presented~~ limited evidence from Vaisali and Rajgir point to the same direction. Obviously, we are confronted with two distinct cultural contexts of the NBP ware - one an earlier context as represented by Sravasti and more easterly sites like Rajgir and Vaisali and the other a later context as represented by Hastinapur and Rupar. Sravasti-II (post NBP phase, has been dated by the intrinsic evidence to a date bracket '300 B.C. - 50 B.C.). As Sravasti-II is largely coeval with Hastinapur-III (NBP ware) phase, I think at the latter site the earliest of NBP ware phase cannot be very much earlier than 4th Cent. B.C. As the evidence of Sravasti, supported by Rajgir and Vaisali, pointed to conclusions of a new kind, I tried to reexamine the problem of N.B.P. Ware in its entirety particularly the



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establish a comparative stratigraphy of the total assemblage as against just that of the delux wares alone.

<sup>1</sup> Marshall was the first archaeologists who discovered specimens of N.B.P., from the lower levels of Bhira mound. He did not take any particular notice of the ware and regarded it as a kind of the 'Greek Black Ware' - though he could not have failed to notice its occurrence considerably below his so-called 'Greek' levels. Ever since a short note on the N.B.P. ware of Ahichchhatra <sup>2</sup> appeared as an appendix to the article on pottery from that site, the ware has figured prominently in recent archaeological researches in India and has since been unearthed from a large number of recently excavated sites. Before we examine the available evidence regarding the chronology and provenance of the ware, we may draw attention to some of the opinions on the subject.

<sup>3</sup> Cunningham, referring to the specimens of the N.B.P. ware from Marshall's dig at Bhira <sup>4</sup> (U.P.) pointed out the apparent contradiction in description of it both in terms of chronology and the fabric. Wheeler and Deva <sup>5</sup> in dealing with the specimens of Ahichchhatra (which themselves did not offer clue with regard to the dating), referred to the presence of the ware at Taxila (Bhira mound). They believed the N.B.P. finds from this spot to be mainly of Pre-Greek period. In origin it may well go back to the fifth century B.C. and it is unlikely to have survived later than the earlier part of the 2nd cent. B.C. In that note, Wheeler and Deva also published a list of eighteen sites, mainly in the central Ganga Valley, which had known to have yielded N.B.P. ware from time to time. The evidence of Taxila was regarded as extremely valuable in giving a chronological limit to the N.B.P. This in turn, held out hopes for dating the early Indian sites as most of the important sites were known, or likely, to produce this ware. Lal excavated Hastinapur in the wake of the above knowledge and recovered about 101 specimens. <sup>6</sup> Stratigraphically CC-0. In Public Domain. UP State Museum, Hazratganj, Lucknow



these were ascribable to Period III which he dated to 600 - 300 B.C. Although he adduced internal evidence from the Hastinapura material for the above dating - and this was by no means formidable - it is difficult to deny that he was influenced by the dating of N.B.P. at Taxila. Kausambi, too, was being simultaneously excavated; here, of course, the N.B.P. was observed in a comparatively more precise datable context, having considerably preceded the earliest appearance of a series of datable coins in well stratified context. Lal was thus, inclined to see in the evidence from Kausambi, a confirmation of his assumption regarding the chronology of the ware at Hastinapura. Kausambi and Hastinapura were thus thought of as having offered the final confirmation to the original postulate of Wheeler and Deva referred to above. General acceptance followed, and in its wake quite a few sites with N.B.P. were excavated, many of which were in the Central and Western India. At these latter sites it was observed that N.B.P. was found in very limited quantities and it was believed to be a sort of 'de luxe' ware. In this connection it was also held that the main centre of the manufacture was in the region lying between Kausambi and Rajgir, and that it may well have been imported on the sites in outlying areas. The belief that it was a prized commodity was further fortified by the occurrence of the specimens which had been riveted by means of copper wire. A slightly later date in some cases was assigned to N.B.P. in the outlying areas of the Central and Western India. Yet the general belief that it belonged to the 500 - 200 B.C. bracket prevailed and we need not list all those sites which have been dated into the reports on the above-mentioned assumption. The above basis of the N.B.P. dating has been questioned by Gordon who was inclined to date



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the Taxila N.B.P. to 400 - 200 B.C. He went on to a listing number of sites, where he notes the occurrence of the ware as late as 1st Century A.D. 'At Ahichohhatra, its date though again indefinite due to unreliable evidence in 3rd Century B.C. at Sar Dhari mid 2nd Century B.C. and at Maheshwar and Rajghat, it starts in the 2nd Cent. B.C. and at Sisupalgarh is as late as 2nd A.D.' As for the Hastinapura material, he was not prepared to accept the dating proposed by the excavator for Period III which yielded the N.B.P. ware. According to Gordon therefore, N.B.P. cannot be dated earlier than 400 B.C., but its central point may be considerably later. Wheeler has recently modified his original view and is indeed inclined to think that the Taxila dating may not in this respect be representative.<sup>10</sup> In this he may perhaps have been influenced by the fact that his own dig in Charsada, very near Taxila, showed N.B.P. in much later deposit and a somewhat similar situation is said to have existed at Swat.<sup>11</sup> All this has led him to assume that 'in the far north-west at Charsada near Peshawar (where a dozen stratified sherds of this fabric were found in 1958), at Udegram in Swat, and even at Taxila itself, its arrival should mostly be equated with the establishment of the Mauryan Empire which spread to these areas from the Ganges after 323 B.C. In other words, I would provisionally ascribe the N.B.P. ware of the north-western region of the sub-continent to the period 320 - 150 B.C., without prejudice to the possibility of an appreciably earlier beginning in the Ganges basin itself.'

In his published work on Charsada, Wheeler has categorised Ujjain too in the region 'geographically periphery to N.B.P. centres of diffusion' and according to him it cannot be averred that 'the ware arrived there



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of the spread of the N.B.P. with the well-known historical event - the Mauryan domination, Wheeler was preceded by Y.D. <sup>12</sup> Sharma. Without implying any link with Mauryan domination, Subbarao was making a somewhat similar observation, when he noted that 'with our knowledge of the age and distribution of N.B.P. belonging to the Early centuries preceding the Christian era, we can clearly see its movements in space and time towards west, east and south from its focus in the <sup>13</sup> Gangetic Valleys'.

The above views may be briefly summarised as follows:-

1. The N.B.P. ware was a familiar type of pottery in Northern India, particularly the central Gangetic Valley, which was also the main centre of manufacture and is dated to 6th Cent. B.C. to 2nd Cent. B.C.
2. A little later, the ware spread elsewhere and was in short supply. Presumably it was imported and regarded as a prized commodity. This spread to outlying areas is generally linked up with the extension of the Mauryan Empire during the late 4th Cent. or early 3rd Cent. B.C.
3. In this region of secondary spread all these sites in central and western India and Deccan which have yielded N.B.P. ware in limited number have been included. According to Wheeler, Taxila, Charsada and Ujjain are to be included in this category, but not Hastinapura.
4. According to Gordon, however, N.B.P. cannot be dated anywhere earlier than 4th Cent. B.C. and that at most of the sites it ought to be dated later than this.

A careful study of the above postulates shows that the dating and provenance of N.B.P. does not appear to have been established on a firm basis; and hence, is amenable to rather widely differing explanations. Incidentally, Wheeler's latest assumption about the dating of Taxilan N.B.P. knocks off

what is almost the only archaeological basis (so far available)



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for the dating of N.B.P. A possible explanation for all this is that in our enquiries we have so far been laying stress on the occurrence of N.B.P. specimens only and we have not adequately tried to study the context in which they were found. At the earlier stages of our enquiry, when not many sites had been excavated, this could have hardly been possible.

Taxila. - In all, twenty-one specimens of N.B.P. have been reported from Taxila and in Marshall's publication, have been reported from Taxila and in Marshall's publication, have been listed under 'Greek Black Ware'. Out of these one from the surface near the Hathial range may be eliminated as of no value to our present study since it is devoid of any stratigraphic context. Two others have been reported from the lowermost depths of the second city, Sirkap (recorded depth 18' & 17'), but have not been illustrated in Marshall's report. As we do not know the nature of the lowermost deposits from Sirkap, these specimens are an unreliable guide. They are not said to be associated with any known 'Greek' finds. Furthermore, since we cannot assume with any certainty that the 'Greek' city was raised everywhere on the natural soil, the 'Sirkap' specimens are at best an unsatisfactory guide for the later date limit. The remaining 15 specimens from the Bhir mound (First city) are stratigraphically distributed as follows:-

The specimens (Nos.226 a & b) - Stratum I

One specimen (No.237) - Stratum II - 6 ft.

and above.

15 specimens - Strata IV & III - 7 ft.

and above.

Nizamuddin Ahmad, who recently studied the material from Taxila in detail has this to say: 'Except no., 226a, b and 227 of Marshall's series which are in fact fragments of



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the same vessel and are not N.B.P., all other fragments of N.B.P. came from the depth of 13 feet, 11 feet, 6 and 7 feet on the Bhir mound or in other words, mostly from the Marshall's strata IV and III. But numbers 226a, b both came from the Stratum II. These fragments are quite distinct from the rest of the series illustrated by Marshall, though he fails to make the distinction<sup>14</sup>. The above statement is of considerable importance and this puts a new complexion to Taxilan N.B.P. which on the detailed examination by N. Ahmad does not appear to have survived in Stratum II of the Bhir mound. We can thus assume that the stratigraphical range of N.B.P. at Taxila was IV - III. We may reiterate the fact that the chronology as set out by Marshall does not call for any major amendment. Thus on this reckoning, N.B.P. at Taxila ought to be dated to 500 - 300 B.C. N.B.P. bowl specimen with stamped decoration closely recalls the Achaemenian silver bowls which were current during the 5th Cent. B.C., and one of these bears an Aramaic<sup>15</sup> inscription of about 390 B.C. Before we take up this question of N.B.P. assemblage, we would like to remind ourselves once more that Stratum IV and III of Bhir mound were very sparsely excavated as compared to the next succeeding Strata II and I. Marshall has made this point very clear. This accounts for the fact that very few antiquities belonging to the earlier strata have been illustrated. In this context, we may also assume with some justification that the ware was not as scarce as is commonly implied by the occurrence of only eighteen specimens. It is therefore, not unlikely that if the lower depths of the Bhir Mound were to be excavated a little more extensively, the specimens may have been found to be more numerous. From strata IV and III, hardly half-a-dozen plain red ware types have been illustrated and except for one vessel which is analogous to another found from N.B.P. yielding levels of Sravasti, the



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pottery types appear to be of a localized nature. In stratum II, which according to our present analysis will be a post-N.B.P. deposit, there are a few comparable shapes. Broadly speaking, the N.B.P. assemblage at Taxila is comparable to the similar context on the eastern sites, viz. Sravasti, Rajgir, Vaisali, etc.

Sravasti, Rajgir and Vaisali - The following common circumstances of the occurrence of N.B.P. may be noted.

1. There is a common tradition of plain pottery associated with the N.B.P. and some of the examples of this are illustrated (fig. ) Incidentally, most of these shapes occur in Period II of Hastinapura.
2. Northern Black Polished ware is prolific in numbers. Generally, the quality of the ware is of a high order and this is particularly reflected in the thinness of the sections which recall the thin walls of the Painted Grey Ware.
3. In the limited area exposed, the main horizon of the N.B.P. ware precedes the earliest use of burnt brick structure.
4. Inscribed material and coinage are absent from the N.B.P. bearing levels.
5. N.B.P. ware is associated with the Black Polished ware. (This ware occurs along with the Painted Grey Ware at Hastinapura).
6. The range of shapes in N.B.P. is not limited to bowls and dishes, although these account for a larger proportion of the collection.
7. Ring wells are a feature of the post-N.B.P. levels at Sravasti and Vaisali.
8. Human figurines are not reported from the main N.B.P. bearing strata, but they generally occur in the late or post-N.B.P. levels.
9. At both Sravasti and Vaisali, the defences belong to post-N.B.P. levels.



10. All the three sites share a common pottery tradition in the post-N.B.P. levels as is evident from the repetitive shapes (Fig...)

Kausambi and Rajghat - The detailed reports have yet to be published; but judging from the available evidence, the pattern does not appear to be different from that described and in respect of circumstance Nos.2, 3 and 4, the affinities are commonly shared. At Sravasti, Kausambi and Rajghat there appears to be independent evidence to support that the main horizon of N.B.P. ware was from 500 B.C. or earlier than 300 B.C. and that its survival after 300 B.C. is inconsequential. In this respect, the Taxilan evidence is in agreement with the above observations.

Hastinapura - The following circumstances of the occurrence of N.B.P. may be noted.

1. The ware was in restricted use as is evident from the fact that two years large-scale excavation produced only 101 specimens. In this context of restricted use, one must take into account the actual area in relevant depths brought under digging. Thus at Hastinapura the main concentration was in exposing as much of the lower levels as possible in the limited operations.
2. N.B.P. specimens generally show a medium sectioned walls and have rarely, if at all, thin walls.
3. The ware is associated with structural activity in baked bricks and terracotta ring wells are a feature of the levels which have yielded N.B.P.
4. Punchmarked and uninscribed cast coins are reported from the N.B.P. bearing levels.
5. Terracotta human figures, including moulded specimens, are associated with the ware.
6. Pottery occurring in conjunction with N.B.P. includes plain red ware shapes, illustrated at nos.--- grey ware types.



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As already stated above, these generally belong to the post-N.B.P. levels at Sravasti, Rajgir, Vaisali and Taxila.

7. Black Polished and Black and red wares occur in pre-N.B.P. levels. It has been shown in Chapter Two that Period III of Hastinapura cannot be dated much earlier than the mid-4th Cent. B.C. and that perhaps it lasted well into the 2nd Cent. B.C. This would be the range of the N.B.P. ware at this site.

Rupar - The report of the excavation has not been published but judging from the material furnished one can assume that the N.B.P. assemblage is similar to that of Hastinapura. (I was myself associated throughout with the digging operations, and I am inclined towards the above assumption). There is however, one additional circumstance which needs to be noted - the occurrence of an inscribed sealing which has been regarded as of early Mauryan date. We have to take note of pitfalls inherent in an excessive dependance on the supposed early Mauryan characters. The sealing could be dated anywhere between 250 - 200 B.C. and in the area where the sealing was found lowest, N.B.P. yielding levels were not very much below.

Ujjain - The reports have yet to be published (but here too, I had the good fortune of being personally associated with the first two seasons digging operations. My impression is that the assemblage is comparable to that of Hastinapur and Rupar). As in Rupar, inscribed sealing supposedly with early Brahmic is associated with the N.B.P. characters. Other materials also associated with the N.B.P. and published in the interim notes are, unscripted copper cast coins, bone arrowheads <sup>etc.</sup> ~~and iron implements~~ none of which has a known datable context earlier than 4th Cent. B.C. The quality of the ware at this site appears to be inferior to those of the specimens from Kausambi, Rajghat, Vaisali, Rajgir and Sravasti. The ware appears to have been locally manufactured considering the find of large numbers



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of rather poor specimens'. Burnt brick structures and terracotta ring wells are associated with the use of N.B.P. ware.

Ahichchhatra - The position of N.B.P. ware is not very clearly defined. In the area (A.C.V) the N.B.P. ware specimens were recovered from the pre-fortification layers. This deposit also yielded P.O.W. specimens. 'This fact tends to indicate that the painted wares and black polished wares are coeval with each other'.<sup>16</sup> In another area it was recovered from stratum V. Here, perhaps, it is not in its true context of deposition.

As a result of this brief survey, (which is further illustrated by a comparative chart) it is obvious that the N.B.P. ware is found to occur in at least two widely differing contexts - one earlier and the other decidedly later. The earlier is represented at the sites like Taxila, Vaisali, Sravasti, Rajghat, Rajgir and Kausambi, and the later at Hastinapura, Rupar, Ujjain, Navadatola, Charsada etc. Gordon is therefore, not justified in implying a uniformly late dating for all N.B.P. Apart from this main observation, the following other points may be made, keeping in mind the opinions referred to above.

1. N.B.P. ware by itself cannot be regarded as a safe datable criterion. It has been shown to be occurring in widely differing contexts and one must look to the associated material before coming to any conclusions about the dates.
2. The sites like Kausambi, Rajgir, Vaisali and Sravasti may be regarded as those included under primary distribution list and here, its main duration was between 500 - 300 B.C. with the likelihood that the ware continued later but with a considerably decreased popularity. Taxila may also be included in this list where, perhaps, the ware was imported from eastern



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centres. We know that Taxila, Sravasti, Vaisali and Rajgir had fairly close trade links.

3. The sites under secondary distribution would include Hastinapura, Rupar, Ujjain, Kumrahar, where the associated assemblage does not point to a date earlier than 350 B.C.

4. The spread of N.B.P. does not appear to have been connected in any way with the extension of Mauryan domination, as suggested above. Not only does the main chronological horizon of the N.B.P. ware on sites under primary distribution appear to have antedated the spread of Mauryan Empire, but the site of Kumrahar, identified with the Mauryan capital Patliputra, produced N.B.P. ware wholly insignificant in numbers and quantity, while the neighbouring Rajgir, the supposed Magadhan metropolis during pre-Mauryan times was an important N.B.P. producing centre.

5. There is also no convincing reason to believe that there was movement in time and space, i.e. the N.B.P. gradually spread out to the outlying centres from the central Ganga Valley. All that we can assert in this context is that it remained in continuing use for a very long time although losing much of its popularity at the centres where it originated, but this aspect was not necessarily dependent on time and space. There is thus N.B.P. at Rajgir belonging to the 500 - 300 B.C. context but at the neighbouring Kumrahar the ware has a much later datable context. There is no reason to suppose why a similar situation could not have existed in regard to Taxila and Charsada - and thus Wheeler's grouping of sites in a chronological bracket based on space-movement may not be justified. We are, therefore, inclined to believe that the presence of the ware at a site lying outside the middle Ganga plains should not necessarily lead us to assume a late date (example - Taxila) and conversely, not all sites (example -



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Kumrahar) even in the middle Ganga plains can be given the same chronological horizon as Sravasti, Vaisali, Rajgir, etc. We may assume that N.B.P. was generally a prized commodity, particularly at the sites coming under secondary distribution. We however cannot be certain if the ware was imported. As we come across widely different grades, the question of import can be settled only if we can fix a standard quality and its distribution. While the main concentration of N.B.P. as revealed by numbers and quality is to be found in the area in which are included sites like Kausambi, Rajghat and Vaisali, we cannot be certain that the ware was not being produced elsewhere. In fact, the wide differences, often met with but not always realized, in the degree of the surface finish would normally lead one to believe that imitation copies were being made on the sites outside the middle Ganga plains. The Taxilan gadrooned bowl in N.B.P. which has very close affinities with the Persian silver ware is a unique specimen and appears to have<sup>17</sup> been manufactured outside the area mentioned above. The circumstance of N.B.P. though an exceptionally high grade pottery but without any recognizable assemblage of its own, recalls to mind a somewhat similar position occupied by the pre-historic Samarra ware in the stratigraphical sequence of the pre-historic Mesopotamia.







## TECHNOLOGY OF THE PAINTED GREY WARE

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The significance of the Painted Grey Ware as an outstanding ceramic industry of the period following the main Harappan civilization in India was brought out by Shri B.B.Lal in his excavation at Hastinapura<sup>1</sup> and explorations of selected regions of Uttar Pradesh, Rajasthan, Haryana and the Punjab. Earlier the same ware had been recovered from two cuttings made at Ahichchhatra<sup>2</sup>. In AC XV, it was the lowest level that produced the Painted Grey Ware, and sherds of the Northern Black Polished Ware were also found slightly above it. In AC V, however, only two similar fragments, complete in section were recovered from a layer below the foundation of a brick fortification. This layer also contained sherds of the Northern Black Polished Ware.

There is a closely related plain darker grey ware, having similar vessel-shapes, occurring with the Painted Grey Ware, and it is surmised that this darker ware was the forerunner of the Northern Black Polished Ware. In fact, at no site the Painted Grey Ware is the exclusive industry; and invariably other associated wares in grey or even red occur along with it. There are only certain fixed forms of bowls and dishes in painted grey ware technique, though the distinctive features are very attractive, chiefly its soft grey colour, fine thin well-burnt section and profusion of painted designs, both linear and dotted, generally in black. At Hastinapura<sup>1</sup>, other associated pottery groups comprise a dull-red ware mainly of coarser fabric, an essentially plain red-slipped ware of finer fabric and a polished black ware.

Excavations at Sravasti<sup>3</sup> and Atranjikhhera<sup>4</sup> and explorations of sites in Uttar Pradesh, Haryana and Rajasthan and Bihar have resulted in accumulation of material relating to the Painted Grey Ware from more



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than one hundred fifty sites, in the light of which investigations are to be made for determining the relationship between Painted Grey Ware and Northern Black Polished Ware on one hand and some painted Black-and-red Wares of the proto-history period. At Ahar, the painted Black-and-red is represented in the bowl with rimless straight or convex sides. In IA and IB phases are present bowls with ribbings near the edge and also the shallow bowl with an external edge or flared edge. There is also a variety with brown slip. The painted decoration consists of (a) dull white on the black-and-red ware, and (b) black on the red slipped ware. The former consists of linear pattern-strokes, lines, spirals, wavy lines, hatched diamonds and slants. These are all found in phases IA and IB. Panelled dotted chevrons are found in IC.

This Painted Grey Ware, has in fact, been used as a cultural label and it is believed that this ware was manufactured exclusively by a well-defined ethnic group, possibly the Aryans who are said to have moved in certain directions in India. An attempt has, therefore, been made here to study the technology of the Painted Grey Ware after closely examining its fabric, forms, surface treatment, decorations and the methods for firing the vessels and other correlated matters. By a comparative study with other wares in India, a picture may emerge wherein its exact horizon and associations are determined with some degree of certainty.

#### Characteristic features

The distinctive features of this Ware are the superior quality of the paste formed of well-levigated clay and fine thin well-burnt fabric achieved with an equally distributed heat in the kiln and a smooth grey surface, ranging in colour from ash grey to battleship-grey and sometimes buff-grey. Associated and coeval with it is a brownish red ware with a grey or buff core. The types represented are mainly straight-sided bowls, cups, and dishes with incurved and



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sagger or convex base. On the grey surface of the body are painted linear and dotted patterns in black, executed before firing. Instances of red - on-grey, black-on-black and bichrome painted designs are met. Sometimes the designs are executed in deep chocolate or black of an unequal tone on a yellow or pale red ground.

#### Painted Patterns

The simplest patterns is the single horizontal band often repeated to serve as a border. There are groups of vertical or oblique strokes below the horizontal rim-band. The strokes are sometimes of unequal thickness and thickened towards the end where from the paint-brush started. These groups are sometimes interspersed with dots. Intersecting lines, rows of dots, dots and dashes or groups of wavy lines or such designs as Svastika, concentric semicircles, sigmas, concentric circles with rows of lines representing hooks etc. are also seen. These designs are on the exterior or outside surface of the vessel. On the inner side or base of the dishes and bowls appear spirals, groups of circles, intersecting chains, scalloped concentric circles etc. (See Lal, B.B. : Excavation at Hastinapura and other explorations, Ancient India Nos. 10 & 11 1954 & 1955).

Subsequently some more designs were seen on sherds found during later explorations, but as, as will be explained below, that all these patterns emerge by adopting a certain technique of painting. The point note is that geometric patterns have been adopted.

#### Fabrication of the Ware

The exact manner in which the Painted Grey Ware was produced on the wheel has not been reported in details by the explorers. That the pot was polished or burnished by a smooth stone is noticed, and it has also been mentioned that stratiation marks indicate the use of a potter wheel.

My own observations of a large number of specimen of this ware



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lead me to think that in India there existed at least three distinct techniques of pottery making, apart from those which were fashioned by hand. All these three techniques made use of the potters wheel. Most of the Harappan Wares and other Red Wares were thrown on a heavy wheel of stone or other material. Vessels which are round or circular in shape and symmetrical about the vertical axis are easily shaped on the potter's wheel. Vessels having thick rims of various shapes, such as, beaded ones, recurved, hooked, everted, knobbed, rolled, internally or externally beaked, collared and voluted or splayed-out ones, were necessarily fashioned on a wheel, when the clay was wet and fairly plastic. The only limiting factor is the thickness of the walls of the vessels. It is to be noted that greater thinness is difficult to be achieved by the method of throwing on the wheel, because if the clay is not sufficiently well-levigated and of desired consistency, any attempt to make the walls very thin on the rotating wheel by pressure of hand may result in complete tearing of the lump of clay. Marks of the cutting string and sometimes thumb or finger impression of the potter are found on the vessel.

The Painted Grey Ware in particular and many other Indian Wares described below were fashioned by utilizing the second technique. In this, the pot was first shaped after it had been thrown on the wheel as above. When the wet pot had hardened sufficiently to become "leather hard" i.e., when the clay had set and dried to a rather lighter tone, it is commonly returned to the wheel or attached to the lathe of some kind on which its foot may be smoothened or its walls reduced in thickness with a scraper. In that condition it may be trimmed, pared, scraped and smoothened. The walls of the vessels may be reduced to "egg shell" thickness. Polishing and burnishing may also be done and the pot coated with an emulsion to serve as a slip. Vessels fashioned in this technique are always of the "open type" i.e., the mouth is



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fairly wide to allow scraping to be done from outside and inside as well. In India at present this technique is still in use in Azamgarh black potteries. It may have its origins in days when vessels in wood were fashioned on lathes. In certain parts of India, vessels of Zink alloys are fashioned likewise.

The wooden wheel was used in the third technique for production of vessels. This is in use in south India.

#### Correlated Industries

All sherds of Painted Grey Ware and Northern Black Polished Ware associated grey wares certain Rangpur III wares, Prabhas Ware, some types in Malwa Ware, Black-and-Red Wares, some of the megalithic wares. and bowls of Pandu Rajardhibi show clear indications of the adoption of this technique. Outside India, grey wares from Khurab burials have been noticed in Stein's Archaeological Reconnaissances in N.W. India and S.W. Iran (1937) London p. 134. Andrews<sup>5</sup> describes the fabric, colouring and other technical features of the ceramics. He states that most of the grey bowls have been scraped or pared on the outside before firing, and several have a fine comb-like-ripple as is seen on pottery from Seistan, Anau and elsewhere. The ripple is caused by the vibrations of the scraper held against the pot while revolving on the wheel during the process of paring and thinning of the wall after the vessel has been reversed and resealed. Pottery from Shahi Tump Baluchistan and Seistan has many parallels with the Painted Grey Ware, though the characteristic dish and straight sided bowls are absent and sometimes there is a ring base which is not to be found in the Painted Grey Ware.

#### Causes of coloration

The causes of grey and black coloration in this ware have not been determined with certainty. Four specimen of ancient pottery of grey colour from Shahi-Tump, Baluchistan which had a characteristic



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burnt appearance, had been analysed and reported by Sana Ullah.<sup>6</sup> The grey colour of this pottery is due to the presence of black ferrous oxide produced by the action of reducing gases in the kiln. The iron in the grey pottery has been reduced to the ferrous state. Gordon Childe,<sup>7</sup> however, thinks that attribution of black or grey colour exclusively to the presence of free carbon is not justified. How much may be due to free carbon or ferrous-ferric oxide should be determined by quantitative analysis. It is quite possible that organic materials were also used in producing this effect. It is certain that reducing conditions must have existed in the kiln. Experimentally it can be demonstrated that a grey ware can be turned into a red ware if heated in oxidising conditions and vice versa if there are reducing conditions.

#### Multiple-brush technique

The most important consideration is that of paintings on the Painted Grey Ware. This aspect at once places it above other wares. There is clear evidence that the multiple-brush device was used in this Ware along with single brush paintings. Braidwood<sup>8</sup>, notices this multiple-brush device was frequently utilized by the Near Eastern potters in the 4th Millennium B.C. The line patterns are largely influenced by a habit of holding three or four or five or more brushes at a time together. Where wavy lines have to be continued where the paint has finished all of them begin at the same place. The distance between the lines remains constant and are parallel. The lines and dots are in constant groups of three, four, five or more. The strokes are thickened at the places from where the paint brushes started, narrowing as they proceeded further. Due to the adoption of this technique, geometric designs can be produced and there is emphasis on the mechanical aspect rather than free hand drawing. Multiple-brush technique is a distinctive feature of the Predynastic Pottery of Egypt.

This multiple-brush technique is attested only in the well



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defined pottery groups of the Painted Black and-Red of Ahār and Gilund, Daimabad, Bahal, Oriup, Cherand, Malwa ware and associated Black Painted Wares. It is noticed in Prabhas ware and Rangpur III Ware, chalcolithic red pottery of the Malwa region, Pandu Rajardhibi and the Russet-coated Ware of South India. The significant fact is that paintings in the multiple-brush technique have been done on the inner side or the base of dishes and bowls which were flat.

#### Conclusion

It is thus seen that the techniques adopted by the potters for producing Painted Grey Ware is not unique and limited to this ware only but has associations far and wide and even red ware groups and Black-and-Red Wares follow the same techniques. It is more probable that various ideas about the methods of fabrication, forms to be adopted surface treatment, decorations and methods for firing were diffused through different regions. Potters in Uttar Pradesh, Haryana, The Punjab, Rajasthan and even parts of Bihar happened to adopt selected techniques for producing the Painted Grey Ware.

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THE DEVOLUTION OF THE PENINSULAR 'NEOLITHIC' CULTURE -

An analysis of Ceramic influences:

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The effect of recent archaeological field investigation in the different parts of the Peninsula - as related to what we knew and now know in the central and northern India -- is a re-assessment of our very basic outlook on the rise of semi-urban or what might be called viable and cohesive societies or communities. The Neolithic period in India -- as in the rest of the world -- had been taken assentially as constituting the use of polished stone tools, domestication of animals, incipient agriculture or at least foraging of edible grains, and use of pottery, hand made first and then wheel made. It was, however, only in the recent decade that it was shown that polished celt need not alone be an invariable index of the lithic tool outfit of such a community, and that a microlithic outfit seemingly functionally geared to a specific planned purpose involving collection and storage of food and animal husbandry, would also come under the purview of Neolithic communities. Of course, the advent of metal (copper or bronze) would imply a revolutionary change in the set-up, but this by itself or by the concomitant painted pottery, need not water down the functionary or epochally 'Neolithic' age. By this term we are not referring to a specific tool kit but to the sum total of achievement at that time. It is, therefore, necessary to apply these principles and expedient standards to the advent of the 'Neolithic' or the early farming communities. The very absence of a truly nomadic life, notwithstanding use of stone tools alone, could indicate a positive progress. The meagre presence of pottery might confer upon such a culture situation



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an inchoate and indeed transitional hue, but would not place the culture context itself out of bounds to a well-knit and larger community life.

In the ages before the 3rd millennium B.C., we have practically no visible sign of a truly semi-urban or advanced and gregarious social picture of human groups. The stage is usually ascribed to the fag end of the late Stone Age and microlithic tools, if only found, were taken as the symbol of early man not given to the leisure and organisation of settled life. While certainly all microlithic cultures are not amenable to a categorisation under the progressive 'Neolithic' outlook -- but only to an atavism of the truly stone Age propensities -- with only the climate and change, resulting in a shift of the physiography of the habitat and the material and size of the tool-kit -- we are still not likely to be fair to culture contexts like those of Langhanaj in Gujarat or the 'Teri's of Madras State, if we relegate them to a dead end of Late Stone Age hunting rigmarole. The very topographical set-up, the character of the tool-types and the subdued but extant nature of a formative organic social entity, would preclude such a sweeping dismissal. If this were so, we may have to validate their role into a forward looking and progressive format, and anticipate the later vestiges of stone-mental (copper first and iron later) - outfit, and painted and graffito-marked pottery, in these barbaric Late Stone Age 'proto-neolithic' societies.

It is now being realised more and more that India did not have any truly early metallic Age, either of copper or its alloy bronze. In fact, any deliberate alloying has not been indicated even in such of the tools as are truly of the bronze category, and it would seem that quite a few of such



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bronze objects, excluding the Indus sites including the Chalcolithic sites, could be imported or in 'secondary' contexts. Only the copper tools, ingots and others unwittingly alloyed by the presence of ore impurities are the common finds. Only after the Indus civilization, a real hunt for exploitable copper in India seems to have taken place in some of the Chalcolithic culture communities. This casts a significant onus on the archaeologist to assess whether a given assemblage is truly chalcolithic (metallic) or only 'neolithic' (pre-metallic). The problem is not just a matter of the presence or otherwise of a few nond script lumps or even finite objects of copper or bronze. Their employment as an integral part of the culture would not be taken for granted, but would have to be established on other independent grounds. The large scale occurrence of microlithic tools along with such sparse availability of metal (copper), has, in addition to facilitating an orientation for the culture context, had complicated the situation further. Their use, while highlighting the paucity of copper (as tool or as metallurgical know-how), would seem to bear evidence of culture-trail, by the typical and technically mass-produced character of some of its types like the ribbon flake. But, when these are found in a Neolithic context and with the use of painted pottery, we have a confused picture, which does not resolve itself into basic ingredients for the culture-situation, but rather suggests a synthesis of culture-elements, due as much to the evolution of the neolithic, agro-pastoral base into something else, as the migration of mere stone or painted pottery using industries, devoid of a culture matrix of a stable kind, to absorb these elements. This temporal conjunction of two culture stages, one primarily primitive and functional group trying to raise its socialo-gical personality to a higher order by imbibing technical differentiate that would be adequate for this, and the other,



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primarily technical industries or specialised groups seeking material fulfilment by being admitted into a self-sustaining society. If this principle, as the basis, is accepted, we might visualise the pattern of diffusion of the Peninsular Neolithic culture with barely the basaltic celts, burnished grey (mostly hand-made) pottery and microliths of a lesser order -- the remnants of Late Stone Age industrial survival -- becoming a comprehensive chalcolithic-entity in various parts of Deccan, absorbing in each zone, the typical borrowal-traits of the area, making variant combinations, thus with the Jorwe Ware, Black and grey (or red) ware, Malva ware, etc. The further north it goes, the more complex it becomes, although it could be maintained in some cases, that the impact of the borrowal elements was made in 'primary' or 'secondary' or derived contexts. For instance, in a classics site of the Tapti valley at Prakash, where as many as six different pottery fabrics had been identified by the excavator, and their horizontal strata-wise relative count with their other contemporary wares given, it is seen that the Black and grey wares (Painted) get diminished in bulk from base (35% in layer [53] ) to top 12.50% in layer 45), while 'Malva ware' shows at the base 43% and registers a spurt upto even 73% (in layer 50) in middle levels, and diminishes later to 55% (in layer 45). Jorwe ware, on the other hand, is seen augmenting itself from a mere 5% (in layer 48) to 15% (in layer 45), but this ware is restricted to the upper levels alone. Lustrous red ware has barely a medium of sherds, but is found to coincide with the time range of Jorwe ware. Other 'coarse, burnished and plain wares' show a continuous provenance throughout the layers 53 to 45, although they are the densest in the much lower levels, and show some foreign impact (from Iran) in their mid-level, around layer 49.



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The table supplied by the excavator, has, thus a scope for meaningful application -- though mainly for the vertical range of the pottery types -- per se, and in combinations, which of course, would be the best use of them in a vertical excavation<sup>1</sup>. The above table of Prakash Period I would show that

(1) in the Tapti Valley, around 1600 B.C. (on the basis of author's dating), there was only Painted black and grey ware, Malwa ware and coarse burnished and plain wares in the area around Prakash;

(2) the incidence of the peak of Malwa ware was only much later, say around 1500 B.C. in that area;

(3) Jorwe ware is at its peak only around c.1300-1200 B.C. in the Tapti valley and actually thins out in the next few centuries in the Narmada valley where, at Mahesvar, it is found in the upper levels of Period I;

(4) There was a Sialk or say North Western Indian element at Prakash, around 1400 B.C.

(5) That painted Black and grey ware is indigenous or at least well entrenched at the time of the very inception of Prakash settlement, and was co-existing with Malwa ware there, which had been in thinner strength at the beginning. But later Malwa ware starts dominating the scene, as compared to every other ceramic;

(6) Around layer 49 and 50 (c.1500 B.C.) there is the greatest spirit of activity in the site, as noted from sherd incidence of most of the categories. The decorated and burnished wares, since they get depleted after this stage, were perhaps auxiliaries to the burnished grey, painted pottery industry.

This study suggests that at least in the Tapti



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valley the painted Black and grey ware gets ousted by the Malwa ware very soon after inception, and the latter is indeed the chief ceramic culture of the site, except in so far as the advent of the painted Black and grey ware here from elsewhere (probably Rajasthan) goes. Thus, either way, these two pottery media were actually filling a vacuum in this area. The cultural level of the area prior to their arrival can only be guessed, and what we might possibly be somewhat sure about is that the peninsular Neolithic culture had certainly been in some shape in this area in the early stage of Period-I, as suggested by the coarse, burnished and plain pottery types. If this has any meaning, it could only be that the stamina of the Malwa ware was greater here than that of the 'neolithic' affiliated burnished ware. Thus, we might think that the indigenous community at a lesser urban cultural level was intruded into by the semi-urban painted pottery-using, and copper using communities from further north, already around c. 1700 B.C. This is more or less the time of the Harappan culture end and dispersal of its elements elsewhere, along with the technologically skilled but unemployed groups. The Prakash pattern was taken, primarily to show that happened at a reasonably northern latitude of the Deccan, and also largely because we have a very careful and scientific documentation of the material by the excavator. But the picture is certainly well supplemented by the scene observed in the Narmada Valley further north at Nardatoli, in the lower Tapi valley itself at Bahal, in the Godavari valley at Chandoli, on the Bhima, at Dainabad, and further down at Maski, Terralakkotta and Hallur, in the Krishan Basin, and even further south as on Kaveri as at T. Narasipur, and the Palar basin as at Payampalli. Every where, we see two striking phenomena, that there is a basal matrix, affiliated in differing degree with a peninsular 'Neolithic' culture essentially of agro-pastoral type, and this is peacefully intruded into by CC-0. In Public Domain. UP State Museum, Hazratganj. Lucknow



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copper using and painted pottery using culture groups of various categories, which certainly do not deluge the area with more metal, but rather with more stone, and which do not produce, again, any lasting painted tradition in the lower Deccan but rather develop into highly isolated local milieu, one of which is witnessed in the Cuddapah-Kurnool area at Sangnapalle, Patapadu, Pusalapadu etc. But to the extent the 'Neolithic' base gets watered down but rises seemingly in material level, we are actually witnessing a transformation of a truly 'Neolithic' society into a sophisticated semi-urban community groups. These communities, doubtless, had the best scope for appreciating Iron Age technology when it was introduced into lower Deccan, further down the corridor of time, around c. 800-700 B.C., until which stage, they continued to thrive in colourful localisation and nondescript sophistication, shining, as it were, on borrowed feathers. Their own stamina for raising their level was effectively subdued by the extant chalcolithic elements in the society, involving living groups and not simply impulses. This analysis would seem to lead to the logical conclusion namely (a) that at a reasonably early stage, say, around c. 1800-1700 B.C., the 'Neolithic' way of life was widely obtaining over a large part of the peninsular, particularly from Salem in the south to Eran and Banda in the trans-Vindhyan region, and as a logical metamorphosis from its survival instinct, it started accommodating the dispersals of the upper Indian areas in the Late and post-Indus civilization schedule; (b) The Jorwe-ware' by its seemingly higher chronological priority in the Narmada valley, was perhaps at its 'terminus post quem' in the type region. It was one manifestation of the chalcolithic melange, another being that of Daimabad on the Bhima, and a third in the Kurnool area as at Sangnapalle; (c) All these were only



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differential processes of regional groupings, but the true 'Neolithic' pattern of culture also continued in degeneration upto the close of the first millennium B.C. in many areas;

(d) No direct cultural impact of the Indus civilization could be postulated to any of these, although it is implicit that the carriers of these 'Indus' traits had a dynastic link with the late Indus groups of both Sind-Rajasthan and Saurashtra;

(e) While, strictly speaking, an advancement or spread of the peninsular 'Neolithic' may not be acceptable, since in every part of the Peninsula the 'Neolithic' culture pattern was of a resident category already between 1800-1400 B.C., the advent and diffusion of the painted pottery using communities from the north, would on the other hand, be demonstrable. In their culture-outfit, copper metallic know how was progressively minimal and degenerate as one advanced further south, but stone element by its familiarity over a wider area and span of time in Late Stone Age, was more evident;

(f) The arterial waterways to some extent helped in the grouping of the zonal assemblages, but other factors like the physical barriers, the flora of the terrain, calling for heavier or lighter stone tools, mattered a great deal. The concentration of the more evolved and elaborate painted variety like the Nasic-Jorwe and other types in western Maharashtra is probably due to the fact that the head-waters of the rivers were more easily crossed than the lower reaches;

(g) What is the most glaring of all the results is that but for quick dispersal of a variety of chalcolithic culture communities physically into Deccan, the area might have been continuing in atavism for a longer period, except in the coastal zones, and would have actually resulted in an



'interior versus littoral' culture differentiation in its structure. The 'pure 'Neolithic' culture did not certainly have in it the making, sufficient for material progress. The situation is not very much different from what obtained in the early Painted-Grey ware period, particularly in the western Uttar Pradesh and Panjab, and its late manifestations when Iron had certainly become accepted as of far-reaching importance for a variety of activities in the material life of the society, and conduced to a phenomenal shift for the better, in corporate urban maturity and well being.

Thus, given two major zones of culture spread, namely, the Indus culture zone of admittedly accomplished urban prosperity and progress in Panjab-Sind Rajasthan-Saurasthra area, and the 'Neolithic' agro-pastoral way of life in the entire Peninsula, the advent of the skilled citizens of the former into the latter produced a better application of tool-technology than what happened in the Ganga-valley in pre-painted grey ware. The impact of Iron metallurgical mastery on both the early painted-grey ware of the Ganga-valley and the Peninsula, though similar was different in degree. It was more readily received in the Deccan and central India, as seen at Hallur or Ujjain, than the Ganga-Jamuna valley, as seen at Hastinapura or Alangirpur. It required some time by which the physical ore-centres of the Bihar region could receive attention for exploitation. It is not established also that this exploitation of the first Iron source in eastern India was only by the Painted Grey ware people. What we, however, know is that this had taken place, already perhaps around c.700-800 B.C. On analogous grounds, Iron ore centres in the peninsular south



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(as in Mysore) also should have been tackled around this time, which is why we get a reasonably early  $c^{14}$  date for Iron, as at Hallur which certainly did not have anything to do with Painted Grey ware for its advent of Iron. The reorientation of conventional approaches to the interpretation of archaeological data has at no time been more strongly indicated than now.

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REFERENCE:

1. As a matter of fact, however, we have to give a correction in all such cases to the fact that, since mounds as a rule tend to get slopy as we go up, the area of the layerwise vertical dig becomes progressively less and less; as such, the area -- incidence ratio of pottery (and for that matter of antiquities also) should also become somewhat distorted, in the statistical sense. The horizontal relationship of pottery mutually will have less significance because of the unknown potentialities of the different areas of the same mound which a single slit trench could by no means represent, and thus the occupational characteristics of the society, as reflected in the layer and their pottery and antiquity density, would be better displayed only in a horizontal dig.



CHALCOLITHIC POTTERY OF EASTERN MALWA

by

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The Vidisha-Dasarna are of central India, comprising eastern Malwa, is well known in the history of the country. From about 600 B.C. to the late Medieval times this region made important contributions to the political and cultural history of India.

Prior to the period of the sixteen mahajanapadas this region had developed a culture, the relics of which have recently come to light. The excavations conducted at Eran (Dist. Sagar) and Besnagar have shed welcome light on the protohistoric culture of eastern Malwa. The results thereof, after a comparative study with the results of excavations at Maheshwar-Navadatoli and Kayatha, have furnished interesting account of the material-culture of eastern Malwa ranging in time from the beginning of the second Millennium B.C. to about C. 700 B.C.

The recent excavations at Besnagar have brought to light important finds bearing on the early historical period. But in so far as the protohistory is concerned, the evidence at the site, so far obtained, is meagre. The case of Eran is, however, different. The pottery and associated finds obtained at Eran, as a result of five seasons excavations work, are quite rich.

Explorations at some of the ancient sites in eastern Malwa have brought to light interesting material. At Tumain (ancient Tumbavana in the Guna district of Madhya Pradesh) early historical Black-and-Red Ware and Northern Black Polished Ware were picked up. Some of the Red sherds painted in black picked up at Besnagar. They are akin to those found from the dig at the site during 1963-64 and 1964-65, assigned to the Chalcolithic period. Due to the limited nature of



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excavations at Besnagar, not much could be obtained there of the proto-historic culture. A few sherds of Black-and-Red Ware, having simple horizontal bands on the exterior, are known from a painted rock-shelter called 'Putali Karar' in the Raisen district of eastern Malwa. These sherds are quite akin to the Chalcolithic pottery known from other sites.

By far the most significant discovery of the Chalcolithic pottery has come from Eran. The site has been excavated by the Department of Ancient Indian History & Archaeology, University of Saugar. During the work lasting for five seasons (1960-61 to 1964-65) twenty trenches were laid in the mounds of Eran. Out of these four located in the main mound yielded important results pertaining to the Chalcolithic habitation. This habitation was found at the top of the black cotton soil. The maximum thickness of the habitation deposit was found 2.14 metres at the outer mounds and 9.15 meters at the main mounds.

The Chalcolithic culture at Eran was found to cover the period between c. 2000 B.C. and 700 B.C. This was followed by the early historical period (700 B.C. to 1st century A.D.). These two have been called Period-I and Period-II respectively.

Period-I is characterised by the presence of microliths of various types, painted pottery and copper. The scarce use of copper was attested to by two fragmentary celts. A neolith piece with sharp edge was also unearthed.

The different ceramic wares of the Period were dominated by the Red ware, mostly painted in black over red exterior. The painted motifs, with a few exceptions, are geometrical. A few sherds in this ware contained incised decoration. The other ceramic industry of the Period was Black-and-Red Ware, painted in white over black interior, the types represented in this ware mostly being dishes.



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Another important ware of the Period was the Grey ware which is also wheel-made. It is sometimes painted in black and rarely in red. Thinner sherds of this ware were usually of finer fabric. This Grey ware does not seem to have any similarity in fabric, types and painted motifs either with the well-known Painted Grey Ware of the Gangetic valley or with the Neolithic Burmished Grey Ware of South India. On the contrary it seems to form an integral part of the Chalcolithic Culture at the site, as it contains types and painted motifs, not different from those of the contemporary Red Ware. A few fragmentary channel spouts were also recovered. These spouts tend to indicate some sort of affiliation of these people with ancient Iran. Several types of pottery from Eran are akin to the pottery obtained from the contemporary levels at Maheshwar and Navadatoli in the Khargon district of Madhya Pradesh.

The other finds of the Period include beads of stone, shell, paste, jasper, steatite and terracotta; terracotta human and animal figurines, fragments of terracotta bangles and toy-wheels, and a very interesting circular gold piece (diam. 9"; weight 20 grains). This gold piece probably served as the medium of exchange for the Chalcolithic people. In all six floor levels were noticed in this period, the earliest one being laid immediately over the black clay. The floors of irregular shape were made of rammed yellow clay mixed with Kankar. Sometimes burnt clods of clay were also crushed into the floor. On the basis of other Chalcolithic sites, it can be said that the Chalcolithic people at Eran were living in ordinary huts having mud-walls. The compact floors were made with the help of mud and lime. Cow-dung seems to have been used to keep the floors smooth. The people may have been conversant with agriculture. Apart from this, they had a fairly good knowledge of pottery-making, the preparation of various types of beads of clay and some



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precious stones and of making implements of stone.

The most significant discovery of this Period is a mud defence-wall and a moat. The defence-wall, as revealed from excavations, is 154 feet wide and 21 feet deep. This wall contained, potsherds, copper celt, and beads and other objects of the Chalcolithic period only. The discovery of the wall explains the unusual depression in between the main mound and the multitudes of mounds to the south of Eran. Almost up to the end of the Period II A (c. 700 B.C.- 200 B.C) the habitation seems to have been restricted inside the mud defence-wall, with only scattered habitation outside. It was in the period III (1st to 6th cent. A.D.) that the area of habitation was extended towards the south. Again in period IV (16th to 18th Cent. A.D.) the habitation become restricted to the main mound, where, in a late phase of the period, a massive stone fortification wall was constructed at the height provided by the previously existing mud defence-wall. The defence wall served two purposes. Firstly it enclosed the town on the southern side, providing artificial protection in that direction. Secondly the depression created by digging the nearby area for preparation of the mud wall naturally took the form of a moat. The excess water of the river may have passed through the moat and thus saved the habitation from the floods and attacks of the outward enemies. The width and maximum depth of the moat is 120 ft. and 18 ft. respectively.

By Carbon-dating this Chalcolithic period at Eran has been bracketted between C.2000 B.C. and 700 B.C.



S U M M A R Y

EARLY HISTORIC POTTERY HANDLES WITH  
HUMAN FIGURINES.

by

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It is proposed to scrutinise, through this small paper, a few pottery jars from different sites of India and datable to Kushana and Gupta periods. On curved handles of such jars or surāhīs, we notice a graphic depiction of female figurines, mostly with their hands folded and placed below the breasts; other interesting feature is the Salabhanjika motif so well known in early Indian art. On most of these pottery handle-figurines we find the nudity aspect shown quite prominently, which probably suggests association with Fertility Cult. The early historic Prakrit treatise, the Angavijja, appears to have alluded to these vessels such as Siri Kamsaga and Dhutullika, probably bearing figurines of goddess of Sri Lakshmi on them. They were probably used for ceremonial or ritual purposes as their number is too small at every place, in India.

Important sites yielding such figured handles may be listed as, Somnath and Amreli in Gujrat; Nagar-Rairh and Sambhar in Rajasthan; Agroha and Naurangabad in Haryana; Ahichchhatra and Kausambi in U.P.; Basarh in Behar..... etc.

Outside India, this type of ceramic handles have been reported from Bactria and Afghanistan where the mighty impact of Indian motifs from Mathura is evident at a mere glance. It appears that under trade contacts with Greek and Roman World, these types of pottery handles came to be popular in Indian territory as well. We have enough evidence supporting this fact. The discovery of such handles in the 600 B.C., ceramic art of Italian Buchhero ware is equally worthy of note. This tradition may even be traced back to the Chalcolithic period; we find such decorated handles in the early potteries from Diyala (Baghdad) region, which had tangible contacts with the Mehikulli culture of the proto-historic period. The discovery of a metal mirror from Mehi is



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is worthy of reference here; the mirror handle comprises of a female body (without the head) as we also come across in the XVIIIth Dynasty art of Egypt and subsequently.

Numerous Metal jars of Roman Workmanship bear testimony to the popularity of this theme outside India, during the first four centuries of the Christian Era. A few metal handles of Alexandrian Workmanship have been discovered at Ankota and Brahmagiri in Indian territory as well; they have been dated towards the second century A.D.

We have to find out exactly what was the source for such decorated pottery handles from India, Bactria and Afghanistan. We have still to come across this theme in the ceramic industry of the Roman period. On the other hand, the metal and ceramic antiquities of 600 B.C. - 500 B.C. from Italy, do bear testimony to the popularity of such vases in Europe; India had wide contacts with the Greek World, even during the Mauryan period. It is just possible that the Indian potters, were subsequently inspired by some Greek or Italian specimens and fashioned their ceramic jar-handles in the popular art of the Kushana and Gupta periods; some are in Red Polished Ware as well.

Indian art impact in the ivories from Begram (Afghanistan) is quite famous. We are also aware of the discovery of a first century B.C. ivory statue of Goddess Sri of Indian Workmanship from Pompei (Italy). The same is said to have been buried as early as 70 A.D.; there also the nudity aspect of the goddess Lakshmi is prominently emphasised, thereby suggesting her close association with fertility and prosperity. This theme is very well presented by Indian pottery handles under review.

Two specimens from Rajasthan (Sambhar & Nagar) also depict human heads with non-Indian faces and attached to the necks of pottery jars as also in the 6th century B.C., specimens of Greek Workmanship. The famous Yakshi pot with Sapatra-Keyuras



in greenish-blue glazed ware from Begram (Afghanistan) and the other from Ujjain (M.P.), clearly suggest some inspirations from the Greek vases.

It is hoped that more material (in the above reference) from other Indian sites will be forthcoming so as to enable us to form an idea about the distribution and popularity of decorated pottery handles in early Indian Art & Archaeology. This paper is presented only to stimulate further research in this direction. The discovery of a number of wine jars and amphoras, with animal figures on the handles, from Khotan region of Central Asia also deserves careful scrutiny; on some of them we find tiny human figurines as well. We do come across simple handled vases in the Śunga and Kushāna sculptures but nowhere do we notice any human figurines on such curved handles. This ~~ex~~ lends additional support for looking into some foreign inspiration for early figured handles from Indian sites under review.

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LITERARY REFERENCES TO POTTERY

(Circa Sixth to the Second Century, B.C.)

By

Dr. Brajdeo Prasad Roy

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I. The period under our review marks a landmark in the economic history of India. The necessities of life caused different industries to be developed and the potters-art also was not neglected. The rich literature of this period contains numerous references to potteries in accidental ways because this literature either is purely religious or pertaining to different branches of secular learning like polity and grammar. The early Buddhist literature and mainly the Jātaka stories, the Aṣṭādhyāyī of Pāṇini, the Arthaśāstra by Kauṭilya, the Vārtika of Katyāyana, the Gr̥hya and the Śrautasūtras, the Pātañjali Mahābhāṣya, and the Manusmṛti along with a few older portions in the Rāmāyaṇa and the Mahābhārata are very helpful to us. The early Jain literature, namely the Kalpa and the Āchāraṅga Sūtras, which also have undergone a process of change and a series of redactions also furnish valuable information. A large number of the Punch-marked coins and the Railings and Toranas of the Śuṅga-period bearing the figures of pots, and hundreds of earthenwares unearthed from different archaeological sites also corroborate the literary references so much so that they prove the activities of the potters-art and their skill in moulding beautiful pieces of earthenwares.

II. The literature of this period refers to the potter, his status in society and the importance of his profession. By the sixth century B.C. we see the existence of the potters-<sup>1</sup>villages. Their profession was so highly esteemed that even the Kṣatriyas and the Śreṣṭhins also did not get social



2.

humiliation in professing it. Pāṇini refers to Kulāla and Kaulālika which mean potter and the earthenware respectively. The general term for a potter in Jain literature is Bhaṇḍāra (Bhāṇḍakāra). The Jain monks often stayed with the potters and saw many things regarding their art, so this literature contains many information regarding their art. The potter's workshop was known as Karmaśālā, Kumbhakārapāka was the place where the earthenwares were baked, Ingāradāha was the place where the pots were fired, in Indhanaśālā fuels were stored, in Bhāṇḍaśālā burnt earthenwares were stored and Panyaśālā was the shop in which pots were kept for sale.

Patañjali gives more details regarding the potter. He mentions that the persons went to them for giving orders for earthenwares of their own likings. Besides the ordinary potters moulding small vessels, there were skilled potters known as the Mahākumbhakāras to mould big jars and other types of big earthenwares.

III. Further, our literature furnishes information regarding the technique of manufacturing the earthenwares. More attention was given to the preparation of clay, as if, it contained too large girts, it would not model easily nor yield a handsome or serviceable pot, hence coarse materials were eliminated. On the otherhand, if the clay contained no girt, it will stick to the fingers in moulding, and will crack in firing. To avoid this danger, some gritty materials like sand, powdered stone or shell chopped straw, and other like things were added.

The Jātaka stories mention that the potters brought cowdung and clay; lumps of clay (Maṭṭikā) were kneaded with water, and were mixed with ash and dung (Gomaya) in order to



make the clay soft. The early Jain literature also furnishes somewhat a similar information. Sauratṭhiyā (Saurāstrīkā)<sup>9</sup> was a particular type of clay peculiar to Saurāstra.

After the preparation of clay, its lump was placed on the wheel (Chakka) which was constantly turned, and vessels were moulded of different sizes by the skilful hands. While the pot was on the wheel, the potter applied a thin coat of very fine liquish clay in order to smoothen the surface of the pot by filling the pores etc. The pot in which such fine liquish was kept was known as the Ayamañchiya (Ātañchikā).<sup>10</sup> Patañjali says that the potter, after preparing the clay, takes its lumps and with them moulds small and big jars.<sup>11</sup>

The wet vessels were dried and baked (Sukhopetvā pachitvā)<sup>12</sup> and made ready for consumption. The unbaked earthenwares were not serviceable on account of their nature, as those were too weak and soluble in water, so the Mahābhārata differentiates a unburnt jar from the burnt one in a simile that a weak king perishes away very soon like a unburnt jar dropped into the water.<sup>13</sup> The potters fired the earthenwares but literature does not refer to the process of firing.

IV. Literature furnishes many names and types of earthenwares which may be classified into many groups, such as the water-pots, domestic pots, winepots, storage-jars, measuring-pots, pots for religious use and the flower-pots.

#### Water pots.

Kumbha was the most popular type of the water jar which is referred to frequently in the Jātaka stories.<sup>14</sup> Pāṇini refers to the Udaka-Purayitavya pots of different types, all coming under the term Kaulālika, the earthenwares.<sup>15</sup> Kautilya also has referred to Kumbha as a water pot. He informs us that its model was imitated for building the "Vapra" around the city, and its particular portion was known



4.

as the "Kubha-kukṣika" as <sup>16</sup> ~~it was established~~  
 like the ~~use of a Kumbha~~. Besides this, he  
 mentions other uses of this earthenware. Hundreds of Kumbhas  
 filled with water were placed in front of the houses and the  
 offices of the state to quench the conflagration in the  
 cities during the summer. <sup>17</sup> Many Kumbhas filled with water  
 were placed in the judicial courts and the witnesses took  
 oath <sup>18</sup> before them to speak the truth. Further more, he  
 instructs the city-guards to <sup>bury</sup> the empty Kumbhas under  
 the ground by the side of the city-walls in order to counter-  
 act digging of mines by the enemy into the city. <sup>19</sup>

The early Jain literature also refers to the Kumbha  
 and its miniature form Kumbhī as water jars with rounded  
 bases.

In the Mahābhāṣya of Patañjali many references to  
 the Kumbha are found. According to him, on the occasion  
 of the performance of the Mahāvratā-sacrifice, some maid  
 servants having Kumbhas filled with water on their heads  
 danced to the north of the Mārjaliya Mandapa. <sup>20</sup> He refers  
 to the Mahākumbhas and the Kumbhīs, big and small jars for  
 storing water. <sup>21</sup> Manu also refers to the Kumbha as a water  
 jar. <sup>22</sup>

Ghata also was a water jar. It is frequently referred  
 to by the Jatakas, and according to Patañjali, Ghata and  
 Ghatī are the equivalent terms for the Kumbha and Kumbhī  
 respectively. <sup>23</sup> Numerous Ghatīs filled with water were  
 placed around the sacrificial altars. <sup>24</sup> Ghatas were used  
 for crossing rivers as these floated on the water and  
 sometimes four Ghatas were used for this purpose. <sup>25</sup> Manu also  
 refers to Ghata and instructs the king to impose a fine of  
 one Māṣa on the person who steals away the Ghata kept on a  
 well for the public use. <sup>26</sup>



## 5.

Kalaśa also was a term for the water jar which is referred to by Pāṇini, and according to him its miniature form Kalaśī was equal in size with the Ghata<sup>27</sup>. So, it seems that Kalaśa was bigger in size than the Ghata or Kumbha. The early Jain literature also refers to Kalaśa and its miniature from the Kalasiā-Kalaśikā.

In this literature different types of the water pots have been referred to such as Gayarī-Gagarī, Kayala - a big Gharā, Karaga - a small water jar, and Maḍakā or the present days Maṭakā. The term Udagadronī denoted a small pot, a series of which was tied to a wheel for drawing water from a well. Vaṭṭā was the present days Battā or the Chukarā for drinking water specially in the social festivities. Gallola was a spouted small water pot which may be identified with the Garuā.<sup>28</sup>

#### Domestic utensils.

Sthālī has been referred to in many Jātaka stories as well as in the Aṣṭādhyāyī of Pāṇini as a cooking vessel.<sup>29</sup> Patañjali refers to the "Sthālīpulākahavi" to be offered to the gods, it was a pot in which rice was cooked, and in this connection he refers to the famous phrase the "Sthālīpul-<sup>30</sup>akanyāya". This pot may be identified with the present days Batalohī built with clay. The practice of designating utensils on the basis of their capacity or the quantity that could be cooked in them, has been referred to by Pāṇini (परिमणौ पत्र, <sup>31</sup>) Patañjali also mentions its different sizes on the same basis such as Dronī, Pātrīnā, Adhikī,<sup>32</sup> Āchitīnā, and Dvikulijīnā.

Ukhā or Ukhyā also was a cooking pot, and Pāṇini<sup>33</sup> refers to it as a frying pan. It may be identified with the present days earthen Karāhī. He refers to its different



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sizes on the basis of its capacity.<sup>34</sup>

There were special types of pots for cooking meat.<sup>35</sup> Patañjali refers to it as the Mānsapachanī, but its exact shape is unknown to us.

Karpara was a cooking pot, and Katyāyana refers to the Kārpara-Odana, the cooked rice which was left behind in the pot known as Karpara.<sup>36</sup> It may be identified with the Khappara, a kaḍāhī like device, which is used as a dish also.

Different types of dishes were used by the people. Pāṇini refers to some special terms applied to food leavings<sup>37</sup> when served in different types of utensils. Katyāyana refers to the plate leavings by the terms Śārāva and Mallaka. Śārāva was a pot in which food was served for eating.<sup>38</sup>

Kauṭilya refers to Śārāva in the workshop of the goldsmith.<sup>39</sup> Again he mentions the "Śārāvamekhalā" or the -- garland of Śārāvas which a thief was forced to wear around his neck and walk in the streets of the city. Patañjali mentions that a little things are kept in a Śārāva, it clearly indicates that it was a small pot. Śārāvas were earthenwares and were used in sacrifices.<sup>40</sup> Manu refers to Śārāva as a pot in which meal was served.<sup>41</sup> These references show that Śārāva was a pot used for different purposes. It was of different sizes ranging from the size of a big Parai to a cup like device. The Mallaka was a term for food-leaving in the pot known as Mallaka or Mallaga. Its exact shape is not known to us.

The early Jain literature refers to different types of the toasting pans such as the Taviā-Tāpikā or the modern Tāvā which is swallow. It was made of clay. The term Avavākkā also denotes a toasting pan -<sup>42</sup> Avapākyā.

Different types of Thalīs must have been used, but in literature references to them are lacking. The archaeological excavations have brought out many types of dishes



which have concave bases with raised sides, which either are vertical or slightly inturned.

Besides cooking pots and different types of dishes, bowls also are referred to in many works. These were small concave pots with broad mouths, and were used mainly for drinking water, liquids, or for eating meals in them. They might have been used also as inter-meditory vessels. The most popular term for a bowl is Kapāla as its shape was like that of a skull. <sup>43</sup> Pāṇini refers to it along with Śarāva, <sup>44</sup> and Kauṭilya mentions it in the workshop of the goldsmith. <sup>45</sup> He informs that it was used for begging alms. Patañjali refers to it as a cooking pot in which Puroḍaṣa was cooked <sup>46</sup> which was known as the Kapālacharu. Different types of Kapālas have been unearthed from many archaeological sites. The appropriate term Kaṭṭoraga for a bowl is used in the Jain literature which is our present days Kaṭorā.

The early Jain literature is very informative as it contains numerous terms denoting different types of domestic utensils. Kuśūla was a big pot in which food was kept, in Kaṇḍu sweets were prepared, and Kuntala was a pot in which food was served. Suphaṇī was a pot in which milk was heated, Mathaniyā - Mathaṇī was a pot in which curd was churned. <sup>47</sup> Pārī and Siṇaga were the pots in which cows were milched. Besides these, different types of lids such as Padipillana-Pratipreṇa, Pindhana, Pihāna and Dhankaṇī have been referred to. Iḍua also was a covering lid. Iddaraya was the lid for covering the cooked food. <sup>48</sup> But, their exact shapes are unknown to us.

Special care was given to the purification of the earthenwares. Manu says that impure pots should be purified by heating them ..... On the fire, but the earthenwares impurified with blood, urine and meat cannot be purified



even with this process, hence must be discarded. Patañjali<sup>49</sup> informs us that old earthenwares were replaced with the new<sup>51</sup> ones. Manu instructs to discard the broken earthenwares but<sup>50</sup> the early Jain literature informs us that the Jain Bhiksus used to repair their broken vessels. Such pieces of pots have been unearthed from many archeological sites which are<sup>52</sup> repaired with copper-wires.

#### Wine-pots..

Wine in its various forms was a popular drink in ancient India and many types of wine-pots are referred to in the literature. Kautilya refers to the poisonous "Madya-kumbhas" or wine-jars to be offered to the republican people causing their death, on the occasion of the outbreak of<sup>53</sup> war against them. Patañjali also refers to the Ghata for<sup>54</sup> storing wine. The Jain literature refers to many such jars in which wine was stored, such as Jambula, Paraya, Bhumbhala and Sandiā-Saundikā .. The Uvachiyā, Kariya and Katalaṅka were the pots which were used to serve wine. The Tokkana<sup>56</sup> was a pot with which wine was measured. Chasaga denoted the<sup>57</sup> cup. Kautilya refers to Śarāva as a wine pot for drinking<sup>58</sup> wine, and Patañjali also gives the same information. He refers to "Potra" an earthenware with which Soma was offered<sup>59</sup> to the gods, it was known as the Neṣṭra also. Many drinking cups have been discovered from many archaeological sites which are of different sizes and shapes.

#### Storage jars

In the literature, different types of the storage jars are mentioned. These were considerably high having pointed base and tapering lower body. On account of their being very heavy, these were not easily portable hence, either were sunk in the ground or made to rest on a specially made stand.



The terms like Bhāṇḍāgāra and Koṣṭhāgāra are derived from the terms Bhāṇḍa and Koṣṭha the storage jars. The Jātaka stories frequently refer to them. The Mahābhārata uses the term Bhāṇḍa as a storage jar.<sup>60</sup> Kautilya refers to the Bhāṇḍas in which gold and other things were stored in the Bhāṇḍāgāra. He uses a special term, the "Bhāṇḍīkādhikarāṇī" denoting a method adopted by the goldsmiths for<sup>61</sup> stealing away the gold pretending to keep it in the Bhāṇḍa. To guard against this, he instructs the Suvarṇādhyakṣa to examine the Bhāṇḍas minutely, and punish the goldsmiths properly, if found guilty of stealing away the gold.<sup>62</sup> He refers to the Nikṣepabhājanas in which oil, ghee and curd<sup>63</sup> were stored. In order to maintain accuracy, he instructs the Accountant General to maintain a complete and accurate account of the Bhāṇḍas in the Bhāṇḍāgāras in order to guard against the "Bhājana-viśama", a term denoting the stealing away the things in a Bhāṇḍa by replacing it with a small<sup>64</sup> one. Manu also refers to the Bhāṇḍas as storage jars and instructs the king to punish those persons who steal away<sup>65</sup> or break them. These Bhāṇḍas may be identified with the present days Handiāys. A large number of such Bhāṇḍas have been unearthed from many archaeological sites.

Besides the Bhāṇḍa, Kumbha, Kalaśa and Ghaṭa also were used as the storage-jars. Patanjali refers to them in which ghee and oil were stored. These were cleaned with hot<sup>66</sup> water and brush.

Kuśūla as a storage jar is referred to by Pāṇini.<sup>67</sup> It was a large cylindrical vessel for storing grain. Kautilya also refers to it which was made either of wood or clay. It was known as the Koṣṭha also.<sup>68</sup> Patanjali mentions it as Kandu or oṣṭha.<sup>69</sup> After storing corn in it, its mouth was covered with moistened soil, but a provision was already



kept in its lower portion to bring out the corn by having a hole known as the Kuśūlabīla.<sup>70</sup> Kuśūlī was a miniature form of Kuśūla. The Kuśūla may be identified with the present days Deharī or the big Thilā.

Other types of the storage jars like Kūpa and Sālā are referred to by Pāṇini.<sup>71</sup> The former was a form of storage resembling a well and consisting of a series of rings arranged one above other. The latter was a masonry structure of store-room specially built for the purpose.

Pāṇini refers to Uṣṭrikā<sup>72</sup> as a storage jar. It seems to be a very tall storage jar with narrow mouth. Perhaps, it was a big Surāhī like device.

#### Measuring pots.

In ancient times, corns were measured in earthenwares, which were known as the Mānabhāṇḍas. Kauṭilya instructs the Superintendent of the markets to examine the correctness of such Bhāṇḍas and to impose fine on the sellers who use the incorrect measuring pots.<sup>73</sup> Different types of the Mānabhāṇḍas are referred to in the literature, such as the --

Ādhaka - It is mentioned by Pāṇini.<sup>74</sup> It was equal to 16 Kudavas or 256 Karṣas.<sup>75</sup> It was known as the Pātra also.

Kauṭilya refers to it as a measuring pot which contained  $\frac{1}{4}$ <sup>76</sup> of the Drona. Patañjali also refers to it in the same sense.<sup>77</sup> Kamsā was an another type of the measuring pot. It has been referred to by Pāṇini. It contained 8 Prasthas of corn. The commodity contained in it was termed as the Kāmsika.<sup>78</sup>

Manṭha a measuring pot as referred to by Pāṇini contained four Kamsās of corn.<sup>79</sup> Khārī was a measuring pot which was used for measuring large heaps of corn. It was a higher unit than the Drona.<sup>80</sup> According to Kauṭilya, it was equal to 16 Dronas.<sup>81</sup> Pāṇini and Patañjali refer to its different sizes such as the Ardha-Khārī and Dvikhārī.<sup>82</sup> Drona and Dronis



of different sizes are referred to by Kaṭilya as the measuring  
 83 pots. According to Patañjali, a Dronapātra was equal to four  
 84 Ādhakas. Kuḍava as a measuring pot was equal to  $\frac{1}{4}$  of the  
 85 Prastha. According to Patañjali, it contained one handful  
 86 of corn and had its many small and big sizes. Prastha  
 87 contained four Kuḍavas of corn. Uṣṭrikā contained ten Kumbhas  
 88 of corn, and Ghata as a measuring pot contained five Uṣṭrikās  
 89 of corn. Pāṇini refers to some other types of the measuring  
 90 pots such as the Pātrikā and Pātrinā. Patañjali refers to  
 Kulijikā which contained one Kulaja of corn, and Saṣṭaka  
 perhaps was a special type of the measuring pot to measure the  
 91 Saḍbhāga. Kumbha also was a measuring pot and Kaṭilya refers  
 to it as the Mahābhānda which contained twenty Dronas of corn.  
 92 and Patañjali also gives the same information. Like Kaṭilya  
 93 and Patañjali, Manu also refers to Kumbha as a measuring pot.  
 94

#### Pots for religious use.

On the occasion of the performance of the sacrifices, different types of earthenwares were used for offering oblations to the gods. Kumbhas, Ghatas and Kalāśas were placed on the sacrificial sites as the auspicious pots. On special occasions, different types of the earthenwares were used as the Vandanakalāśas. Uptill now, painted Kalāśas are used for this purpose.

The Brāhmaṇa, Buddhist and Jain monks were allowed to use only the pots made of either clay, wood or gourd. Kamanḍalu was such a pot which was used by them. The Jain literature refers to some other types of pots for monastic use such as the Patigaba-Patadgraha. The Jain monks were allowed to use other vessels termed as Tupparaga and Tappanaga whose exact shapes are unknown to us. The Khatanga was a peculiar bowl used by the Jain monks while begging when they were



undergoing a punishment for a fault.<sup>95</sup>

Manu mentions that the ascetics must not use metallic and lustrous pots (<sup>96</sup> नैजसनि पात्राणि).

#### Flower pots.

The finer tastes of the people are indicated by the fact that there were certain pots which were used as flower pots such as Pindalaga and Puppachhajjiā. The Singiā-Srngikā denoted a syringe with which water was sprinkled on flower plants.<sup>97</sup> Artistic representations of flower-pots are depicted on the Toranas of the Stūpa at Sānchī which are like the Ghata or Kalasā, but with wide mouth and broad base.

V. A large number of the earthenwares unearthed from different sites exhibit the skill of the potter-painters, but in the literature, we get only scanty information regarding the technique of paintings on them. The Kuśa Jātaka shows that the potter's skill was exhibited in the preparation of the earthenwares with female figures engraved on them. Some earthenwares were coloured and decorated with many colours and motifs respectively (<sup>98</sup> नाना रूपरिा समुत्पत्तिः). The Jain literature refers to paintings on the earthenwares and Alinjara or Kalada was the particular pot in which colour was kept.

Some pots were coated with oil. The excellent coating material consisted of sesamum oil mixed with ash. It was rubbed with cotton on the fired pots. After it, the pot was rubbed with a polishing stone known as Ghuttaka. Such polishing stones were available at Bhoganagara which was situated somewhere between Pāvā and Vaiśālī. Then, the pot was kept in the sun for drying, and after that, the ash was washed away and another coating was given over the pot. This process continued from two to five times.<sup>99</sup>



The foregoing details indicate that the Indian potters moulded different types of the earthenwares. Indian pottery with its long history reveals surprising -- range of shapes, sizes and motifs worthy of illustration in a Corpus. At one end of its series is the giant Kuśūla and at the other the tiny Chaṣaka. In literature, different types of the earthenwares are referred to, and thousands of the earthen pots have been unearthed from the archaeological excavations. Now, it is our sacred duty to identify them taking the help of both these sources. This would enhance the development of the study of pottery as a separate branch of learning which is in its infancy.

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by

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With the emergence of a typical and entirely new ceramic known as the Northern Black Polished ware, a new <sup>era</sup> ushered in the material culture of the people of Northern India. The users of this ware brought <sup>in</sup> them a high order of technological skill which revolutioned the entire field of human activity and as a result of that we find a complete change over from the preceding way of life. This change was for the better. The use of iron in more abundant scale for varied purposes made it possible for them to lead a settled and urbanised life. Iron as a metal, no doubt, was known to the people of the preceding ~~Chalcolithic~~ culture but its use was some what limited, as is known to us from the evidences <sup>1</sup> which have come to light from the excavations at Hastinapur.

Stratigraphically, the N.B.P. ware has been located after the Painted Grey ware and the Black and red ware. This ware has a wide distribution. It occurs at Taxila in the North West to Sisupalgarh in the east and Amravati in the south but its main region centres round the Gangetic valley. Its occurrence outside the Gangetic valley is comparatively small than that of the Gangetic basin. The precise date for this ware has been fixed in between C.6th century B.C. to C.200 B.C.

Passingly, it would be desirable for us to know the stock of people who brought about this great economic change in the society. Now, if we associate the P.G.Wares using people with the Aryans as has been done by Shri B.B.Lal on the basis of the evidences from the excavations at Hastinapur and other allied explorations, the question can be solved. It has been observed by Sri Lal ~~with~~ that the N.B.P. ware, in all probability is an improvement upon the Black slipped ware which occurs along with the P.G.Ware. It is just possible that the Ceramist of this age might have been conducting experiments on the Black slipped ware and when they acquired perfection in the technique of manufacturing the



ASSOCIATED ANTIQUITIES OF THE N.B.P.

WARE WITH SPECIAL REFERENCE TO BIHAR.

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~~N.B.F. Ware they switched on to this new type of pottery.~~ It is the law of science that progress is usually ~~by~~ achieved by experimental attempts, starting with elements which are already known and mastered. This law fits well in this case. We can thus assume that the P.G. Ware and the N.B.F. Ware using people were not ethnologically different stock of people.

Let us leave this discussion here since it is a very controversial problem. To whatever stock the N.B.F. ware using people may belong to, there is no denying the fact that the period was of great prosperity. The material equipments of the period under consideration have come down to us in diverse forms from excavations, but in scanty way, yet they present a fairly reasonable picture of the economic position, agriculture, art and architecture, food habits, warfare, trade and commerce, amusements etc.

Let us begin with the ceramic complex because ceramics have been acclaimed by the archaeologists as the primary cultural equipment. The period witnessed tremendous boom in the field of ceramic activities. If the wares, the most crucial is the N.B.F. ware. Made of well levigated clay and fired under very high temperature the ware presents very high lustrous rangin<sup>1</sup> in colour from steel black and silvery to golden. The shapes so far encountered include dishes with incurved sides, bowls with straight convex, corrugated or tapering sides, lids and rimless carinated hand<sup>2</sup>. To this may be added a flanged bowl which is a rare type. <sup>3</sup>Gravast<sup>3</sup> and Kausambi have offered to us painted and incised sherds in this ware, but this is a rare phenomenon.

On account of its beauty and durability, it enjoyed the status of the Delux ware of the period. The appearance of basically new shapes not known in the P.G. ware reflects new ways of doing things - the adoption of new method of food production.

Black slipped ware, Red and Black Ware, Grey ware and Red Ware are the associate potteries of the age which met the increasing demand ~~of~~ for the new types.

Black slipped ware, a pottery of the preceding Chalcolithic



culture continued with the N.B.P., indicating an unbroken succession at Sravasti, Atranji Phora, Rajghat, Pataliputra, Sonapur and Chirand while at Nagda, Ter, Hastinapur and Vaisali it does not occur with the N.B.P. The types in the ware are dish and bowl (both plain and corrugated). They are made of fine grained clay and are well fired. Both the surfaces of the pots are treated with black slip, and some times burnished. They range from fine to medium variety.

Black and red ware persisted in this period, but with some modification. This ware has been reported from many sites of Northern India. Particularly in Bihar, it occurs in all the excavated sites like Vaisali, Chirand, Sonapur, Rajgir, Pataliputra, and Oriup. The fabric becomes finer, and more new shapes such as basins, big jars, <sup>and</sup> vase come into being. Invariably the pots were treated with wash or slip.

Grey ware assumes more new forms. Apart from dish and bowl, lipped and plain basin and carinated rimless handi are added to list. Majority of the vessels are plain, but impressed designs like hollow cross, wheel with spokes, concentric circles and crescented hill appear in the centre of the inner portion of the pots. Some sherds show painted designs in black.

The relative abundance of red ware over other wares suggests the more utilitarian character of the pots. The fabric ranges from medium to coarse variety although fine specimens are not at all wanting. Many new types such as storage jars, conical-bowl, lid with strap handle, spouted vase make their appearance. Other types already known in other wares such as lid cum bowl, basins, lipped bowl, vases, miniature pots, dish and bowl also continue. Pots in medium and coarse fabrics are mostly unslipped. Storage jars, basins, vases are found in medium to coarse fabrics with grittyish core. Fine sand is freely used in such types of vessels. Bowls and dishes are made of fine grained clay and they display red, tan and orange coloured slip over the surface. Vases and jars usually found decorated just below the rim. The decoration consists of rope design, thumb pressed design in applique method and incised designs such as criss-cross, ripple etc. Impressed designs like triskules, pipal leaf etc. are also found on carinated rimless handi.



Painting has also been noticed on some pots in this ware. The design consists of parallel horizontal lines, solid dots, group of sigmas and horizontal rim band. The paintings are mostly in cream pigment and are found generally on the external surface of the pots but occasionally on the inner side also.

The wares and the types discussed above allow us to draw certain important conclusions. In the first place they reflect the ceramist's understanding of the peculiar properties of the substances with which he worked - his high technological skill in the preparation of the paste ~~composition~~ for the N.B.P. Ware and the discovery of shapes, quality of pots and better firing method.

In the second place, the relative abundance of the potteries gives a glimpse of the density of population and their prosperity. Lastly the paintings and Designs speak of the beliefs and concepts of the populations.

There was a good stride in the architectural activity but the picture emerging from the excavated site is not of uniform nature. The excavations so far conducted are of the nature of index excavation and due to this fact full knowledge of the building activity cannot be had in the present state. As the evidence goes, there was a tendency to bid good-bye to the age old building materials like mud and mud bricks but complete switch over to the more durable material, i.e. burnt bricks had not become possible. Although there was an increasing crave for kiln bricks, which had made it debut in the later part of the Chalcolithic period, yet it seems that its use was largely confined to the structures of public utility. The perplexing discovery of 250 ft. long wall at Rupa<sup>6</sup>, probably an enclosure of a big edifice, a barn and chain from Hastinapur and remains of tank and well at Ujjain testify to this fact. Structures made of mud and mud-bricks still persisted. Examples of such structures are found at Nagda, Ataranji Khora, Hastinapur, Mathura and Rajghat, while at Ujjain and Awra use of dressed stones with mud for building purposes is also attested to. Small hearths of bamboo and reed have been discovered at Chandraketugar<sup>8</sup> and Mathura. It is rather surprising to note that in Bihar except Patanlipura, no picture of structural activity in brick has been



obtained. Evidence of fortification has also been obtained from Ujjain and Rajgriha. Fragments of polished sand stones, apparently architectural members have been unearthed at Pataliputra which speak of the knowledge of the people in stone architecture.

Buildings were laid out according to the pre-conceived plans. The discovery of terracotta ring wells, <sup>9</sup> sewage jars at close intervals <sup>10</sup> brick and pottery drain in the habitational areas reflects, in a way, the high civic sense and sanitation arrangements.

Agriculture was the main source of peoples livelihood. Vast areas were brought under cultivation. Land was irrigated by tanks and wells. The discovery of sickles and hoes points out that crops were harvested and stored in earthen storage jars. Rice, wheat and pulses were the main cereals which people consumed. The discovery of the above named cereals at Ter and Nevasa in the N.B.P. Level testifies to this fact. Rice, no doubt, was known in the preceding age but wheat and pulses were added in the dietary system of this period. That a large <sup>11</sup> people was non-vegetarian is proved by the discovery of a large number of bones from the different sites. This leads us to suppose that cattle were domesticated for milk and meat. Terracotta net sinkers which were probably used for catching fishes further justify the non-vegetarian character of the people. Variety of shapes in the earthen Wares indicate the developing dietary laws of the people.

Barter system was in vogue for the exchange of commodities before the introduction of the coinage. People might have experienced considerable difficulty in this system in carrying out the growing trade of the country in the absence of coins. This led them to introduce coinage in India for the first time which facilitated to boost the economy of the country. Practically from each and every excavation, punch marked coins both ~~the~~ in ~~the~~ silver and copper and uninscribed copper coins have been exhumed in large number. These coins are of different denominations, the lowest being 56 grains in Weight. Perhaps the organisation of traders guild introduced the system of coinage.

Weights of different denominations discovered from excavations further throw light on the point that commodities were weighed and



and sold. These weights perhaps helped to gear up the trade. The weight made of steatite and jasper have been reported from Iran, Vaisali and Chandrad and a terracotta from Jajmau in the Kanpur district of U.P.

We may now pass on to consider the artistic activities of the period. Art during the period displays the flowing linear movement and an inexhaustible rush of forms. Clay being ductile, cheap and easily available found favour with the folk artists who utilized it to reflect the popular tastes and ideas of various grades of the common folk. The clay figurines bespeak of the primitive as well as sophisticated diction. From the excavated sites yielding the N.B.P. Ware in Northern India clay figurines have come out in profusion. Bihar among the sites seems to be the most prolific centre. Patliputra, Bulandibagh and Buxar offer very fruitful clues to the study of the stages through which the clay figurines had to pass in this period. Archaic specimens of this art have been exhumed from the earliest levels yielding the N.B.P. sherds at Patliputra. Human figurines are completely hand-modelled and their hands and feet are represented by stump of clay, eyes either by circlets or incised lines, hair by perforations on the head or incised lines and nose by <sup>pinching</sup> ~~painting~~ out the clay thus representing complete lack of imagination on the part of artists.

Towards the late phase, face began to be pressed out of mould. Luxurious ornaments consisting of rosettes with ribbons attached to them, earlobes and heavy round neckless were displayed on the body through the applique technique. Standing female figurines wearing under garment and flouncing skirt and typical cap on the head, discovered at Bulandibagh and Sonapur in Bihar, are examples of delicate tastefulness. Objects of amusement for children in the form of clay figurines of animals such as ram, dog, antelope, elephant, horse, bull, tortoise, snake, birds and toy carts have made their appearance during the period. Examples of these animals are completely handmodelled and are invariably decorated with punch circlets, notches, deep incised lines and impressed leaf design. Majority of them are in red colour and treated with red slip but instances of gray and black coloured terracottas have also come down to us from Mathura, Ahichhtra and Vaisali. Here it is interesting to note that Buxar has yielded painted terracotta animal figurines having lozenge



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shaped eyes bearing horizontal <sup>Strokes</sup> bands in yellow pigment. The discovery of a mutilated couchant bull made of sand stone from one of the excavated sites at Pataliputra points to the fact that the artists of the period knew of transforming the artistic imagination in hard material like stone.

Regarding the dress of the people we have no direct evidence except the terracotta spindle whorls which may hint at the art of weaving, but the terracotta figurines allow us to have a glimpse of the dress worn by the people in those days. Women generally used to dress themselves with aprons like modern Sari and blouse but use of skirt is also attested to. The two beautiful specimen wearing flouncing skirt from Bulandibagh and Sonapur speak of it. Though this kind of dress is totally foreign to the Indian people, yet its representation in the clay figurines speaks of the changing taste and the underlying cultural link with foreign countries.

Life in this age had become much sophisticated and this sophistication made the people to lead a comfortable and luxurious life. Accordingly, taste for various items of luxury developed. Luxurious ornaments like ear lobes, torques of different shapes, necklaces, bangles, pendants and rings made of different materials like terracotta, precious stones, glass, ivory, bone and copper began to be used by the females to look charming and delicate — a normal weakness with the females.

The rich and the poor lived side by side in the society. Those who could not afford to have precious ornaments made of stone or copper contented themselves with earthen beads, bangles and ear studs, while on the other hand, the rich section adorned themselves with ornaments of precious stones like shell, agate, carnelian, amethyst, soapstone and also glass. Practically, all north Indian sites have placed before us the relics of the above named ornaments. Beads of different shapes like barrel, spherical, triangular and all stages of fabrication have been reported from Bharoch in Gujrat. Nagda and Sonapur have offered to us pendants made of ivory and crystal respectively. The Crystal pendant having Egyptian human face is an object which highlights the craftsman's patience and skill in engraving the human face on such a hard material like Crystal. This piece, undoubtedly, appears to be of



foreign origin and indirectly hints at the trade relation with the outer world. Ear studs having a gold plate with a repouse pattern discovered at Prabhas Patan (Soyath) reflect the use of gold in ornaments.

The object of toiletry included antimony rods of copper, hair pins of bone, combs of ivory and terracotta flesh rubber and nail parer.

The extensive use of iron during the period hints at the advancement in the technical know-how of smelting and forging iron implements. The excavations at Ujjain have furnished us with evidence in this regard. Iron made the life more secured and dynamic. The on-rush of war equipment like lance, spear, javeline, arrow head, and daggers etc. point to the fact that people were better equipped with for defence purposes than before. Of course, the war implements must have been supplemented by bone arrow heads and terracotta sling balls which are found in profusion. Not only in the field of defence but also it appeared on the domestic scene. Pans, lamps, nails, knife blades and clamps etc are such items which are needed in daily affairs of life. Further it brought momentum in the field of agriculture and as a result of that ploughing of land and harvesting of crops became easy with iron plough, sickle and <sup>by</sup> hoe. Tools for different crafts began to be manufactured such as drills, adze and chisel which boosted the wood craft of the period.

In the wake of iron, use of copper became restricted. It was now used in the production of Punch marked and cast coins and also for manufacturing antimony rods, toys, rings and beads. Use of silver and gold is also attested to by the discovery of silver punched marked coins from Chirand and Prabhas Patan (Soyath) respectively.

A large number of bone objects from almost all the excavations have been obtained. These objects have been variously called by archaeologists as bone point, stylus, arrow head etc. Perhaps bone points and arrow heads might have been used in hunting of small birds.

Of the antiquities discovered, the most perplexing is the occurrence of the polished stone cells in the early historical sites. The occurrence of these celts has been reported from Sonapur, Chirand, Vaisali and Jyotip in Bihar, Jaugada and Sisupalgarh in Orissa and Taxila in the



the north-west. The late survival of these neolithic celts has posed a great problem before the archeologists. John Marshall while giving explanation for this has said that these stone implements might have been utilized for sacrificial and ceremonial purposes just as stone knives continued to be used until a late date for religious sacrifices by the Egyptians. But this explanation does not appear to be very sound. The only possibility according to Dr. Verma is that neolithic people were employed as labourers to cut down the forests in order to reclaim wider areas under cultivation. These neolithic people came with their tools in the Urban areas and in course of time they settled down with historic people.

Apart from the finds listed above, there are still some miscellaneous objects whose casual mention is enough. It includes seals and sealings, potter's dabber, potter's stamp, stone pestles and querns, stone disc and dice made of terracotta, bone.

Now that we have an understanding of the social, economic and religious components during the period under review, we may now move on to bring out in brief the sum total of the whole picture.

At the very outset it is worth while to state that the population density was much more than before which is testified by the mounting pottery evidence of the period. Due to better means of subsistence and living condition, population increased by leaps and bounds.

To feed the increasing population, the society had developed various kinds of industries such as ceramic, bead, ivory, bone and metal. To streamline the production of the different industries in the society, it had divided the population into different class of artisans. By this division of labour it so happened that the artisans became experts in their respective fields which enabled them to maintain the high standard of their products. The economy of the people was based on trade and industries. Of course, agricultural produce did contribute a lion's share in it. Agriculture was no more an uncertain affair. Tanks and wells were utilized for irrigating the land and the adoption of new methods of food production enabled people to raise crops in abundance. New cereals like wheat and pulses were added in the dietary law of the populace which was supplemented by meat and fish.



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The social condition becomes manifest when we glance through the variety of structures made of bamboo, burnt brick and stone. These clearly reflect social gradation in the society.

Clay figurines supposed to be of mother goddess have been reported from Mathurā, Ahichhtra, Buxar etc. which may with some degree of uncertainty compel us to surmise that religion in one form or other existed in the society. This assumption can be further strengthened to some extent by the prevalence of special nature of pot known to the archaeologists as lipped bowl. The limited occurrence of this type of pot may point to its use on religious occasions.

Art objects of the period such as clay figurines indirectly magnifies the pristine simplicity and sophisticated diction of life. The artists during the period combined in themselves the social ideology of upper as well as lower section of the society and expressed these ideologies in the plastic art.

Above all, the most significant aspect was the extensive exploitation of iron. It assumed its dominant role in practically every field of life. Its impact was not only felt in defence, but also in agriculture, domestic, industrial and architectural fields as well as.

So this was a diverse picture of the complex life during the period. Now if you examine the position of Bihar in the background of above picture it will appear that there are certain points which are very striking (1) The N.B.P. Ware has been found from all the excavated sites in northern India but the specimens coming from the sonapur (Gaya District) are surprisingly the best from the point of view of fabric, polish and its relative abundance in comparison to other sites in yielding the N.B.P. ware. The C-14 determination of the earliest level yielding this pottery at this site takes back the date to the 7th century B.C. which is the earliest date known for this ware in India. Since it has been agreed on all hands that the main focus of the N.B.P. Ware is the Gangetic basin, particularly the ancient Magadha, can we not suppose that Sonapur might have been the N.B.P. ware producing centre because this site presents variety of shades and types and also the date of this ware is the earliest known in India. If this assumption is correct we can infer that Sonapur



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was the place of origin of this ware and from here this ware travelled to other parts of the country as a trade commodity.

(2) The artistic quality of inexhaustible forms of clay figurines in Bihar are much more than in any other sites of the Indo-Gangetic basin. Of course, Mathurā, Ahichhtra and Kausāmbī have presented a large number of clay figurines but the female figurines with flouncing skirt from Bulandibagh and Sonapur, the laughing boy and female decked with luxurious ornaments from Bulandibagh and the display of variety of head dresses in female figurines from Buxar are such examples which surpass the artistic talent of other regions.

(3) When the people of Bihar <sup>were</sup> much technically advanced, why is there complete absence of brick structures in the sites excavated so far except Pataliputra ?

(4) Iron implements have been discovered in abundance from the different sites in Bihar during the period, yet it is surprising that not a single smelting furnace for irons has been discovered when there is enough of iron ore present in South Bihar. Should we then suppose that iron implements were imported from Ujjain in those days where iron was a flourishing industry ?

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# PAINTINGS OF THE POST-HARAPPAN CHALCOLITHIC POTTERIES

By

Dr. Bhugwant Sahai

Pottery since very early times has been utilized by the village potters for expressing their artistic talents. Archaeological excavations carried on at Kālībangan in Rajasthan yielded specimens decorated with elaborate painted designs suggesting thereby the beginning of the art of painting pottery in India at least as early as the pre-Harappan period. The potters continued painting their pots with diverse designs in the early Indus civilization which flourished in the 3rd millennium B.C. Recent excavations conducted in the post-independence period at a number of sites in the northern and north-western parts of the country laid bare the remains of what has been designated as the post-Harappan chalcolithic culture, represented mainly by the black-and-red, the Malwa and the Jorwe wares. Like others of earlier period, majority of the specimens are though plain, and sometimes even without any slip, yet there are still many which display paintings executed not only on the potteries of the main ceramic industries, but also on some of those found in association with them.

The regular striations inside majority of the vessels undoubtedly suggest that they had been turned on the potters' wheels. To judge from the customs prevailing even these days, it does not seem very unlikely that the potters performed this process, while their women gave finishing touches to the pottery, and also painted the designs. After a pot had been shaped on the wheel, it was very often treated with a thick slip over it. Wares like the Malwa and the Cream-slipped are well known to have been covered with a thick slip in order to make the surface smooth. When dry, it was carefully polished with a piece of bone or a pebble. This process resulted, after firing, in a beautiful highly burnished vessel, which in first class work has the sheen, colour and appearance noticed in red Chinese lacquer. The designs, several of which also occur on the pottery of other



ancient countries, although some are peculiar to the post-Harappan chalcolithic period, were painted on this slipped surface, or alternatively on the matt surface, with a brush or broomstick-end before firing.

Of the three main ceramic industries characterising the post-Harappan chalcolithic culture, the black-and-red ware, obtained as a result of the application of the 'inverted firing technique' in baking the pots, has been found mainly from the excavations at Ahar<sup>1</sup> and Gilund<sup>2</sup>, both near Udaipur in Rajasthan. Besides these two, a number of other sites as well in western and central India have yielded specimens of the black-and-red ware<sup>3</sup>. What invests the pots of this ceramic industry with special significance is that they have been painted both on the exterior and the interior with various designs, which have been drawn in white or creamish white colour. The painted designs are of extremely rudimentary character. They are not many in the beginning, though their number increases gradually. It is, however, mainly the group of parallel lines and cluster of dots which took the fancy of the potter-artists and which in combination with certain geometric forms helped them create variegated patterns pleasing to the eyes. A bowl coming from the excavation at Ahar<sup>4</sup> is of remarkable character. Painted a little above its profile round the rim's edge, it presents a row of hatched parallelograms alternating with a group of parallel vertical lines. Other notable designs painted in white over the black-and-red ware are a group of verticals along with double horizontal rows of dots, a row of trapezoids with a number of dots both inside and outside, and a row of acute angles<sup>5</sup> turned towards the right and entirely made up of dots. Gilund has, however, widened a little more the range of the decorative designs painted on this ware. Of these, particular mention may be made of groups of dashes, wavy or straight lines, the last being placed either vertically or obliquely in zigzags, opposing groups of dashes and concentric arcs, cross-hatched lozenges, either in a continuous row or in groups separated sets of vertical lines<sup>6</sup>. The painted designs on the black-and-red ware are thus confined only to a few linear strokes, cluster of dots and geometric forms; plant, animal and human representations being conspicuous by their absence. The reasons, are, however, not far to seek.



The authors of the black-and-red ware were certainly not so much artistically advanced that they could have created as elaborate designs as found on the pre-Harappan and the Harappan potteries. The black-and-red ware has been dated between c. 1800 B.C. and c. 1000 B.C. And, if, as suggested by Sinha and Sankalia, the black-and-red ware is actually the ware of the Aryans, then it may certainly have been produced when its authors themselves had not fully established and were practically in a semi-nomadic state. It is, therefore, no wonder if only very simple designs comprising of linear strokes and cluster of dots are met with on the painted red-and-black ware.

Pottery of an entirely different fabric came to light from excavations at Navdatoli, situated on the Narmada, opposite Maheshwar, about sixty miles south of Indore, where it occurs as a major pottery fabric right from the first occupation and runs throughout the entire chalcolithic habitation. Excavations at Nagda, Tripuri, Awra and Eran have also brought to light pottery of the same fabric. Painted in black or light reddish black over a pale yellowish brown to dark red slip, the pottery came to be technically known as the black-on-red or the Malwa ware, on account of its occurrence throughout Malwa - an old geographical region comprising parts of Central India. Unlike the black-and-red ware, the painted designs over the Malwa ware were not limited to geometric designs, strokes of parallel lines and dots only. Doubtlessly, they are not varied in the beginning, but soon after they assume a wider range of decorative designs, which bespeak highly of the artistic taste of the Navdatolians. They were so much overpowered with the urge of painting their vessels that they did not even leave out their lids unpainted.

The designs painted upon the so-called Malwa ware from Navdatoli, however, resolve into a number of clear-cut divisions. Though variegated in forms, they are dominantly geometric. Of these, the plain and horizontal or oblique bands are by far the simplest of the designs. They have been drawn usually round the neck and along the edge of the rim, both inside and outside, and also around or across the belly or



shoulder of the vessel. An inspection of the lines suggests that in certain cases they were drawn free hand or by inexperienced hands, but in majority of the cases the lines are so firm and regular that some sort of instrument appears to have been employed for the purpose. In some cases the line-points are thin, while in others they are thick; such an effect was obviously achieved as a result of the nature of the pottery fabric itself. Lattice or hatched designs at Navdatoli appear to be the most common. Diagonal lattices make their appearance in vertical bands. There are also some of the vessels which show designs difficult to make out. They include elongated triangles within triangles partly hatched or connected with each other, and elongated triangles diagonally latticed or horizontally hatched. Such designs have been usually described as the stylized representations of leaves. Zigzags are also amongst the favourite designs which in different combinations present some very interesting and complex forms. They occur also on the red and the cream slipped wares. Straight and wavy lines, besides presenting some very simple designs, also combine to form arches which are more regular and artistic. Such designs occur invariably on the fine Jarwe-Nevsa fabric. Chevrons, solid diamonds and groups of opposed triangles are amongst the designs rarely found on the typical Malwa ware. Besides these, there are circles, circle within circles, crosses with unique and variegated designs which also find place in the decorative scheme of the chalcolithic Navdatoli ware. Recent excavations at Navdatoli revealed a number of new painted designs. Of these, certain animal forms, probably antelopes, all highly stylized, and two human figures probably symbolic and double spirals are worthy of note. The band of running antelopes and group of dancing human figures seem to have found special favour with the artists of Navdatoli. At Chandoli as well, the decorative designs are mainly restricted to geometric forms. Lattice and loops seem to be more favourite, and zigzags frequent. But the magnificent range of animal patterns is extremely scarce at this site, only a single piece having depicted a stylized animal.



Contemporary with the Malwa ware, there was another ware known as the cream slipped ware. The pots in this ware are found coated with a thick slip of cream to greenish white colour. Besides exhibiting a wide range of shapes than the black-and-red ware, the ware in this fabric is remarkable also for its surface paintings. The potter-artist seems to have taken great care in making the surface smooth by the application of the thick slip. Paintings which have been executed in black colour on the thick slipped surface exhibit a very wide range of decorative designs. Though not much different from those already revealed on the black-on-red Malwa ware, yet there are certain designs<sup>17</sup> like black dots between horizontal lines and groups of dots on either side of a triangle, hollow circles between vertical lines and hollow circles between vertical wavy lines all forming panels and thick-lined hollow diamonds, which are typical to the cream-slipped ware. Besides geometrical designs as on the Malwa ware, there are also motifs of dancing human figures, running antelopes, tigers, besides stylized animals not yet identified. While the dancing human figures, spotted animals, etc. on the cream-slipped ware are restricted to the lower chalcolithic level at Navdatoli, at<sup>18</sup> Gilund they are found from the uppermost levels only, where as well the dancing figure and animal with stippled body are noticed on the<sup>19</sup> ware of this fabric. Chandoli has yielded sherds depicting geometric designs which are much inferior to those found at Navdatoli.

The post-Harappan chalcolithic period in the Deccan is represented by a pottery of distinct kind which after its type site has been<sup>20</sup> designated as the Jorwe ware. Characterised by its metallic ring and<sup>21</sup> dull matt surface, the ware is more abundant and uniform at Jorwe, Nasik<sup>22</sup> and Nevasa. Excavations at<sup>23</sup> Daimabad, Bahal and Prakash<sup>24</sup> have also brought<sup>25</sup> to light the ware of the Jorwe fabric. Like the wares already discussed, the Jorwe ware was also painted with designs on the matt surface with black colour. There is, however, a strong bias towards linear and geometric patterns. Specimens are, however, not wanting which in a few



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cases indicate the presence of some plant and floral designs. Horizontal bands of one or more painted lines of varying thickness are the most common. Equally common are the simple patterns made up by connecting long horizontal line bands with closely grouped verticals or diagonals. Straight or curved diagonals or oblique brush strokes have been employed as space fillers. Zigzag patterns between horizontal line bands appear to be a favourite design for decorating shouldered globular vessels. Other designs comprise festoons, lattice or criss-cross pattern, horizontal bands of connected, cross-hatched and solid rhomboids or lozenges, cross-hatched triangles, etc. It may, however, be mentioned that the geometric patterns on the Jorwe ware are more rigid, whereas on the Malwa ware, they show more freedom, delicacy and liquidity of lines.

Special mention must be made of the designs formed by a combination of horizontal line bands, loops or zigzags, oblique or vertical strokes. The designs though made up of linear motifs give the impression of a dense growth of grass. It is very likely that the designs possess some symbolic value connected with the plant world. Floral and leafy patterns are also found on certain specimens though rarely. These may be included amongst the naturalistic designs. At Nevasa as well, a sherd seems to be representing a plant.

It may, however, be mentioned that at Jorwe, animal and human representations are conspicuous by their absence; but it is not so at Nevasa. Antelope is one of the animals usually represented at Nevasa. The other animal depicted is a dog or dog-like object. There are specimens which show antelopes running one after another with their tails raised, which, according to Z.D. Ansari, may suggest their mating season. In almost all the cases, the antelopes are shown wavy horned. Apart from the realistic depictions of the antelopes and the dog, the potter-artists of chalcolithic Nevasa indulged in stylized paintings on their pottery. In such stylized representations, the animals are



shown in a stationary pose. They exhibit attempts at symbolising rather than drawing the animals. As such, it is rather impossible to name the animals intended to be depicted.

The painted potteries of the post-Harappan chalcolithic period, like those of the other periods, amply demonstrate the quality of mind and heart put in by the potter artists. Besides reflecting the aesthetic sense and the artistic achievements of the people who painted them, they also suggest in no unequivocal terms their capacity for selecting the right type of the clay and the pigments <sup>u</sup>required for potting the vessels and painting them. Apart from hinting at the technological knowledge in the acquisition of which the artists may certainly have been required to undergo specialised arduous training, these potteries painted with various designs also serve as the index of the people for whom they were prepared - their artistic taste, their economic status, their religious leanings and ritualistic practices.

The designs painted on the potteries of the period can broadly be grouped under the geometric, the naturalistic, the animal and the human representations. The artists in course of time achieved perfection in their art, and certain of the designs painted by them seem to have been endowed with symbolic character. For example, wavy lines, long and short, may have stood for rivers and snakes, also suggesting in turn the swampy or marshy land inhabited by the people who drew such designs. Likewise, rayed discs, partly shown above an arched or wavy design, may be interpreted as representing the rising sun, which the artists may have desired to show in order to produce an effect of morning's delight. Naturally enough, in such representations, an endeavour must have been made to depict such scenes or figures with which the artists themselves were closely associated, rather which formed a part and parcel of their daily life. Running antelopes have been drawn very realistically. Though drawn in conventional attitudes, yet life seems to throb under their skin. The dynamic character of the animals coupled with their attractive



spiral horns make them more impressive and lively. The chalcolithic people may have very often chased the antelopes in a bid to obtain the booty after hunting them. It is, therefore quite natural that the antelopes formed a favourite subject for representation on the potteries. Representation of tiger on the pottery may also point to the animal which they usually hunted, and with which they were very well acquainted. Unfortunately the sherd from Nevasa depicting a dog on the painted pottery is so fragmentary that only its hind part can be seen on it. However, the appearance of a dog or a dog-like animal on the painted pottery is of no little significance. Some of the sherds from Daimabad also seem to represent the figures of the dogs. The representation of the animal on the pots may indicate that the chalcolithic men had already started domesticating animals. Moreover, a dog is of considerable assistance to the hunters in their hunting expeditions. It is, therefore, no wonder if the potter-artists from Nevasa and other places thought it desirable to immortalise their constant companions by drawing their figures on the pots. Certain skeletal remains found along with the human burials at Langhnaj in Gujerat have been identified to be those of a dog. The find of a dog's jaw in a child burial at Nevasa also goes to corroborate what has been stated above. Certain of the representations on the Malwa and the cream-slipped wares have been taken as the dancing human figures. It may, however, not be unreasonable to suggest that dancing may have perhaps been included amongst the religious rituals, though it is not unlikely that it might also have a secular side. There are, however, no representations on the potteries of the period which may be taken as representing some musical instrument, nor the antiquities unearthed from different sites can be regarded as such. Hence, it would be too premature to suggest if the dancing was accompanied by musical performances. However, a study of the symbols and the figures found represented on the painted potteries of the period throw some very valuable side-light on various aspects of the life of the post-Harappan chalcolithic people.



With a modest, rather very simple beginning, the designs printed on the potteries of the period not only grew in number, but also showed firm grasp of the subject by the potter-artists. The designs, as already hinted at earlier, mainly consist of geometric forms which preponderate over other kind of representations. Geometric patterns have been drawn with great ease and success by the artists of Harappa, Mohenjo-daro, etc. on the black-on-red Indus valley potteries. The design composed of a series of intersecting circles, a pattern which does not appear on the wares of any other still ancient civilization, and which is somewhat bewildering to the eye, forms one of the favourite decorations on the jar of the Harappa culture. As already referred to, there are also on the pottery of the period representations of concentric arcs. Another favourite device on the Indus valley pottery is the tree pattern, generally placed in metopes or panels, alternating with other motifs. Some of the patterns are well defined, but others are so much degenerated that they consist mainly of verticals drawn at intervals to represent the trunks, while horizontal wavy lines denote the branches. On the Jorwe ware, as already seen, a combination of linear motifs presents the impression of a dense growth of grass. Triangles set in rows form a very effective decoration on the Indus valley pottery when they are not repeated too often. The potteries of the post-Harappan chalcolithic period also show triangles playing important part in the decorative scheme of the wares. Cross-hatching of triangles, squares or other motifs has been very often resorted to in the well known potteries from Mohenjo-daro. Cross-hatching or <sup>t</sup>lacing has also been utilized as space filler or for distinguishing one geometric form from the other during the period under survey. Likewise, thick or thin bands of borders run round the jars to relieve the main decorations and to avoid monotony on the potteries of the Indus valley period. So also is the case with the potteries of the post-Harappan chalcolithic period. Even potteries from Chanhudaro belonging to the Jhukar period exhibit designs made up of



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group of parallel vertical lines and short linear strokes, as noticed on the painted black-and-red ware. It is, therefore, not unlikely that the painted designs that appeared on certain potteries of still earlier periods may have served as models for the potter-artists of the post-Harappan chalcolithic period.

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# POTTERS AND POTTERIES IN ANCIENT INDIAN INSCRIPTIONS

By

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Inscriptions as a source of history have been regarded indispensable. They have illumined various nooks and corners of ancient Indian history. It would, therefore, be not improper if an attempt is made with a view to seeing what informations these inscriptions have to furnish about the potters and the potteries in ancient India. The great importance of pottery in establishing the cultural sequence of an excavated site having been realised in recent years, the attention of the scholars has been drawn towards the archaeological finds and the literary references for making its specialised study; but the inscriptions which also form a class of literature by themselves have been relegated into the background.

The antiquity of engraving inscriptions goes back to the Harappa period; but unfortunately inspite of the best efforts of the scholars the so-called pictographic script on the seals from Harappa and Mohenjo-daro could not be deciphered and is still a sealed book to us if they have anything to offer on the subject.

Though direct references to the potters and their potteries are wanting in the inscriptions of the Mauryan time, yet there are passages in them which cast valuable side-light on the flourishing state of the ceramic industry. References to royal pleasure tours, hunting expeditions and religious tours, official tours, king's acts of piety, people's observance of various rites and ceremonies on the occasions of of sickness, birth, marriage and other samskaras certainly



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indicate that the potters must have found a busy time as the occasions demanded abundant supply of earthen wares.

Direct references are, however, not lacking altogether. In a Mathura inscription of the time of Huvishka, his feudatory is said to have set up a *punyaśālā* (rest-house) where a hundred Brahmins were to be fed every month, and where a certain measure of powdered grains, sauces, and earthen water-jars and drinking cups were to be kept daily at the gate for feeding the orphans and the needy. The Nasik inscription of Mādhariputra Isvarasena refers to a guild (*śreṇi*) of potters (*kularikās*) functioning in the district. A potters' guild is referred to in the Kāman inscription. While the Kuruspala inscription of Someśvara refers to a potters' colony (*Kumhāra-vāḍa*), the Kamauli inscription of King Vaidyadeva mentions 'Kumbhakāra-bhogyavahi' and 'kumbhakāra'. A *kumbhakāra-garta* is also found referred to in an inscription. It may, however, be noted that *garta* in association with *ṣarāḥ* denoting some village parts appears in numerous inscriptions. Can't we assume these *garta*s to be referring to the potters' ditch in the villages?

The Mallar inscription of King Jājalladeva II presents a very beautiful picture of a *maṅgala-kumbha* set up on the eve of a god's worship. Śiva's head has been described as the auspicious jar, the matted locks of his hair as the mango leaves placed upon the jar and dangling around it, the third eye burning on his forehead as the lighted flame of a lamp fixed on a stand, and the streams of the Ganges over his head as the water covering the jar. The analogy of the <sup>11</sup>streams of the Ganges may very well fit in with the white stripes drawn on the outer surface of the auspicious jar. The practice of installing a *maṅgala kalāśa* adorned with mango leaves and surmounted by an earthen lamp fed with clarified butter still continues



while offering worship to the gods.

The practice of displaying a jar full of water (sarpūrṇa kumbha) is also alluded to for the success of one's journey (yātrā <sup>12</sup>śddhiṣu). Usually earthen pūrṇa-ghaṭas decorated with painted designs and mango leaves are still placed on the doorway on such occasions.

The Tirumukkudal inscription of Veera Rājendra Subrahmanya (11th cen A.D.) speaks of having fixed one hundred and eight kalasas draped with red cloths before a goddess on the occasion of the king's birth-day. <sup>13</sup> Such a practice of placing kalasas covered with pieces of red cloths before the image of Durgā is still followed. The very reference to a large number of kalasas being placed may suggest their clayey character. Moreover, earthen jars are considered auspicious and quite fit to be used at the time of worship.

Adisimha, a local king, who had gone on hunting expedition and who had to halt near a village during the night, is said to have demanded of provisions in accordance the custom prevalent those days. <sup>14</sup> Mahāsāmantādhipati Śāntivarmana is also seen sending a messenger to the villagers with the order to supply for the cavalry and the elephants, which was readily carried out. <sup>15</sup>

These and various other references picked up from the inscriptions are undoubted testimony to the potters' trade having flourished unabated and extensively, even though the metallic industry had been recording progress.

In this regard, a verse in the Deopārā inscription of King Vijayasena, a ruler of the Sena dynasty of Bengal, is of great significance.

सुवर्णं यदि खस्यति स्मिन् चक्रे शुभैरुत्तमपिण्डं चित्तं नो भवेत् <sup>16</sup>  
तदा घटः स्यादुपमानं रिक्तं सुवर्णं कुम्भस्य तदीयं तस्य॥

Having become impressed by the beauty of the golden kalasa (kumbha) fixed on the śikhara of the Pradyumneśvara temple,



the poet's ecstasy found spontaneous expression when by a single metaphor he presents a graphic picture of a Bengal potter, some nine hundred years ago, sitting at his wheel turning on and on, placing a lump of clay at <sup>its</sup> centre, fashioning into pots of variegated forms by the application of deft strokes of his hands. The picture may still be enlarged in some of the Bihar villages where amidst fast decaying old patterns of life and cultural values, the potter's wife and the other members of the family sometimes afford assistance by way of repairing fresh lumps the potter would need another moment or by painting the pots already prepared with colourful designs, a host of village boys and girls surrounding and looking wistfully with the desire nursing if the kind hearted artisan would allow them to have some of these admirable pieces. Assistance to a potter by his wife is an age-old practice which has been alluded to even by Kalhana<sup>17</sup> and Hemachandra<sup>18</sup>.

The Deopārā inscription is thus quite explicit on the point that the people of Bengal used earthen wares shaped on potter's wheel, one of the types commonly used being the ghaṭa, which served as model for the golden jar or alternatively for the jar treated lavishly with the golden substance. It is also apparent that ghaṭa and kumbha were vessels of similar type - a fact corroborated by the literature of the period.

Wheel-made pottery seems to have been in great use in the western provinces of the country. According to the Kāman inscription, the members of a potters' guild in possession of wheels were required to pay one pana every month to a local temple<sup>19</sup>. It may, however, be noted that Uśanasa<sup>20</sup> quoted by Maṣkarin attests to artisans either performing one day's work every month without any remuneration or by paying one Kārṣāpana by way of tax.

As to actual types and varieties, it has to be conceded



that the inscriptions do not furnish desired informations much. Potters are no doubt required to supply earthen wares to different institutions. The Khoh and the Karitalai inscriptions of Mahārāja Jayanātha refer to village artisans (kārukān) who were required to offer services to the donee.<sup>21</sup> The Chebrolu inscription of Jaya mentions a potter having been assigned certain measure of land for supplying earthen vessels to the local temple,<sup>22</sup> while the Tirumukkudal inscription of Veera Rājendra informs the potters to have received grains for supplying vessels to the temple kitchen, the teachers' residences, the students' hostels and the local hospital. They also supplied kalasas to the Alavāras.<sup>23</sup> But the actual names of the vessels which they supplied are not forthcoming from these inscriptions. Certain of the inscriptions, on doubt contain the list of the types of vessels, but it is not certain if they all relate to earthen wares.

One of the commonest types frequently mentioned in the inscriptions is the ghata,<sup>24</sup> a synonym of kumbha. Kumbha, chāmī-kara-kumbha,<sup>25</sup> māṅgala-kumbha,<sup>26</sup> and sampūrṇa-kumbha,<sup>27</sup> the variants with qualifying prefixes, have been described with reference to their utility and their material. Māṅgala-kumbha and sampūrṇa-kumbha were probably decorated with the painted designs as the auspicious occasions demanded. Kumbha meant for storing water has been referred to in the inscriptions, the shape and size of which may profitably be ascertained from the artistic representations of the contemporary period. Chāmīkara kumbha and suvarṇa kumbha may probably have been prepared on the model supplied by the earthen kumbhas. Ghata appears to be of several sizes and varieties. It may, however, be mentioned that the base of a pillar has been called a 'kumbhaka',<sup>28</sup> which appears more often as actual architectural member, sometimes plain and sometimes decorated with fluted design. The decorated jars, round in shape, obtained from the excavations, may, therefore, be designated as 'kumbhaka'. In the Mathura inscription



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of Haviṣka, it is mentioned as ghaṭikā meant perhaps for storing water, though its exact purport is not quite clear. R.B. Pandey translated it as water-jar, <sup>29</sup>Ghaṭikā, according to the Mṛchchhakaṭika also denoted a water jar. <sup>30</sup>In an inscription of the 10th cen A.D. from Mewar, ghaṭikā-pala is mentioned as a measure of capacity for storing liquids like milk. <sup>31</sup>Ghaṭi as well is found used in the sense of a water jar, perhaps of a smaller size. <sup>32</sup>It also has been mentioned as a measure of capacity for grains. <sup>33</sup>Paṇini has equated ghaṭi and kumbha as a measure of capacity of 20 <sup>34</sup>dronas.

Another popular type of earthen vessel is bhāṇḍa, very <sup>35</sup>often denoting big jars for storing grains or keeping wine. <sup>36</sup>It appears also as a suffix brahamaṇḍa-bhāṇḍa. <sup>अद्भुतं नमो राजा...</sup> The exact type which it may have represented is, however, not clear. Sometimes, <sup>37</sup>it has also been used in the sense of merchandise:

"पुष्पफलमरिचसुखीयमृत्तुनिषु माण्डेषु मरकपौरैरनु।"

The word bhāṇḍāgārika has been frequently used to denote an official in charge of a store house. <sup>38</sup>Still earlier, one of the Buddhist Cave Inscriptions of Nasik refers to bhāṇḍakarika <sup>39</sup>who was to be approached for the supply of coconuts, etc. In the Magahi colloquial language, the phrase khaṇḍā-bhāṇḍā is usually used in the sense of house-hold tit-bits, including the earthen wares. In the villages of Bihār, big storage jars are still known by the word bhāṇḍi. They are also used more than often as water jars. It, therefore, does not appear unlikely that the earthen vessels, as in our times, were also used differently according to the needs or choice of the people.

In the context of the water jars, mention may be made of <sup>40</sup>pāṇiyabhājana. The lexicons refer to pāṇiyabhājana as a drinking vessel; but it seems unlikely that donation of jars made of insignificant material like clay should have been made to an institution. It is just possible, it may have referred to a jar made out of some costly material. Bhājana is a



synonym of a *pātra* in the *Abhidhānachintāmaṇi*. A word inscribed in Brāhmi character on an earthen vase giving its name reads as <sup>42</sup>*pāte*, apparently standing for *pātra*. Terms like *pupphaganiya-*<sup>43</sup>*pāpa* denoting a flower vase also occur in the inscriptions. In an inscription of the 12th cen A.D. occurs a phrase *saṁstasreyasā-*<sup>44</sup>*meka-pātra*. Phras e like "*viṣṇorharmyamaṇalāśilparachmāvaichitrya-*<sup>45</sup>*pātra*" is also found. It may, however, be noted that an ink-pot is usually called *masi-kupi*, *masibhājana*, *masi-bhāṇḍa* or *masi-pātra*. *Kupi* meant simply a pot, somewhat hollowed out, but the difference between *bhājana*, *bhāṇḍa* and *pātra* is not quite explicit. *Pātra* appears to be also a pot somewhat hollowed out. The word *bhāṇḍa* may suggest clay ink-pot. Miniature pots found in large numbers in course of excavations at Paharpur and other places were presumably such *bhāṇḍas* used as ink-pots.

Among other utensils, reference to *karotā* is highly interesting. An inscription belonging perhaps to the time of Kumāragupta X mentions some money and two *karotās* being donated by one Anantagupta to an almshouse.<sup>46</sup> *Karotā* has been taken as basin or cup. Donation of earthen cups to a *sattra* does not seem likely though it is highly probable that the name may have been applied to the earthen cups or bowls as well. Can't the *karotā* of the inscription be equated with the *kaṭorā* of our time?

In the Mathura inscription of the time of Huiṣka, the word *mallaka* has been used perhaps for drinking vessels.<sup>47</sup> The inscription informs that five *mallakas* were required to be kept daily at the gate of the alms-house for the orphans and the needy. These *mallakas*, presumably referred to the earthen cups. In the *Mṛchchhakatika*, *mallaka* appears to be a vessel of special type: *evam-brihati-mallaka-pramane-kule-aham-jātāḥ*.<sup>48</sup> In the context it has been mentioned, it seems to suggest a drinking pot narrow at the base, gradually expanding towards the profile, and sufficiently wide at the mouth. *Saṁsthānaka*, a low-born brother-in-law of the king, the nature of whose family is



~~compared~~ with the drinking vessels said to have grown along with his father is prosperity just like a mallaka by virtue of the marriage of his sister with the king. In the lexicons mallikā is used a synonym of <sup>49</sup>kosikā, and <sup>50</sup>chaṣaka. The Ajantā cave paintings depict drinking vessels which tally in detail with the goblets, presumably mallikā.

The inscriptions referred to a special kind of water jar called galantikā. The word occurs in the inscription of Vikramāditya V from the Dharwar district (galanti<sup>51</sup>ge). According to the Purāṇas, galantikā seems to signify a small earthen vessel, <sup>52</sup>while the lexicons suggest a pot with a hole at the bottom meant for dropping water over the linga of Śiva <sup>53</sup>a practice still followed in the Śaiva temples. Galantikā may probably refer to perforated jars found from different excavations.

The Purusottam plate of Ramachandra contains a peculiar word agnistikā, <sup>54</sup>which according to Mirashi, has been translated as a fire-pan. In the Rāmāyaṇa as well, it has been used in the same sense, but in the Āpastamba Śrauta Sūtra, it seems to signify a vehicle meant for carrying the fire. As fire was carried in it, it may have signified an earthen pot.

A large number of inscriptions contains the phrase bali-charu-vaiśvadevāgnihoṭrātithi. Charu is an oblation which used to be offered to the gods and the manes, and as such the vessel in which it was prepared also came to be known as charu resembling a cooking-vessel. Charusthali, according to Gobhila used to be a kind of vessel either of <sup>55</sup>udubara wood or of clay. Earthen cooking-vessels known as charui are still used extensively in the villages of Bihar.

Some of the inscriptions like the Sunak Grant of Karmadeva from Gujerat refer to pailam, <sup>56</sup>which according to Buhler, denotes modern pailum in the region. Hultzsch took it for modern paili, a measure of 4 seers. Paila is a vessel of different measure capacity used still in Santhalpargana and in certain parts of Chhotanagpur, sometimes made of clay. It



is narrow and flat at the base, bulging on the profile, slightly narrow and incurved at the mouth. A

Another measure for capacity for grains was *mūṭaka*, current in western parts of India. In the Arthuna inscription, reference is made to a *mūṭaka* of salt.<sup>57</sup> In the Angeri plates of Bhogavatī of the year 461 Kalachuri-Chedi era also appears the word. Mirashi translated it as a basket (of corn?). According to Monier-William, it means a basket, and apparently it would not suggest an earthen vessel. But in the Lekhapaddhati *mūṭaka* has been used in the sense of a measure for grains and liquids. In the Angeri plates, the phrase is '*mūṭaka-ghṛta-sātikācha*'. It is just possible it conveys the meaning of offering (one *mūṭaka* of ghee'. In the villages of Bihar, a special kind of earthen vessel, called *maṭakā*, *maṭakī*, or *maṭukī* is used. They are of varying sizes and shapes, built thickly and sturdy, with the mouth out-turned. These vessels are efficiently baked so that they produce metallic sound, and are usually used for storing grains, molasses, etc. Even liquids like curd, ghee or milk<sup>58</sup> are kept in small sized *matukis*. *Maṭukī* of cord is very often found mentioned in the *Māgahi loka-gītas*.

In Gujarat, the *mūṭaka* is spelt as *mudaka* or *mudā*.<sup>59</sup> Hence like *pailā* of Bihar, *mudaka* may be regarded as the Gujarati version of the Bihari *maṭakā*. *Maṭakā* may also be equated with *madake* in Marathi and *mude* in Kannada. In some south Indian inscriptions, terms like *koḍa*, *solasa*, *thāṇḍiga*, etc. occur in the sense of vessels used for measuring liquids like ghee, oil, etc.<sup>60</sup> Earthen vessels are still considered suitable for storing oil, ghee, etc. in the villages of Bihar. According to ancient Indian medical treatises, ghee stored in a metallic vessel for some time should not be used, as it causes one to suffer from leprosy.

A survey of the potters and the potteries in ancient India on the basis of inscriptions leaves the unmistakable impression



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that the ceramic industry was in a widely flourishing state in ancient times. The industry of the potters came to be organised into guilds in western and southern provinces of the country. Separate colonies of the potters also came to be established in those parts. Guilds, however, seem to be conspicuous by their absence in the eastern provinces of the country, so far inscriptional references are concerned. But individual potters and their art did thrive in these parts. The potters had though a wide market for their wares, yet in the east particularly, they had to meet only the local demands.

So far the use of the earthen vessels for different purposes and occasions are concerned, the whole country was bound by a single tie of ritual performances. The custom of using earthen vessels for measuring corns and liquids was followed throughout the length and the breadth of the country and they some times bore similar names, and were used for similar purposes. The study of the inscriptions thus affords wide possibility for throwing very useful light on the potters and their useful handicrafts, though they belonged to different ethnic stocks in the two halves of the sub-continent.

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POTTERY AND THE STUDY OF CULTURE-SEQUENCEby  
Radhakrishna Choudhary

Pottery, belonging to the place and the people, is often the only readily available material on the ancient sites and naturally therefore it forms the starting point of modern archaeology. It invests a civilisation with a cognisable identity and as such it is an essential element of a civilisation. In studying the history of culture-sequence, it provides us with a much satisfactory basis. As indication of past cultures, it is important source for the study of ancient society and history and helps us in building up the sequence of cultures. Though rarely found in complete forms its importance in studying our past culture can not be minimised. The identity of a potsherd is unmistakable enough not to fail an archaeologist in identifying a particular culture. Pottery groups have, therefore, been rightly interpreted as guides to cultural diffusions. It holds a significant position by its specialised distribution pattern in different ages. It is so specialised in fabric as well as in form that it does represent a particular cultural trait. It has its own style changing from age to age and in recent many clues have been given by the pottery bearing sites. Even as an index of culture, it has not received the attention it deserves.

Pottery is a part of human activity and is made by man. It developed gradually. From a study of the comparisons of the various kinds of pottery, it appears how far a given type of tool was spread. Containers like baskets, leather bags and pottery formed the few possessions of early man. Pottery was used as utensils and cooking vessels. It makes its appearance along with the stone tools in the late Stone Age. Whereas pre-historic archaeology in the Deccan shows cruder pottery without the wheel, archaeology shows excellent pottery made on the fast wheel about five thousand years ago in the Indus Valley. Though not too well decorated, the Indus valley pottery is good in quality and mass



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produced on fast wheel. It is believed that like agriculture, pottery making must have been the sole prerogative of women. The potter's wheel, discovered later, possibly gave superiority to man. The Indus Valley pottery mass produced to standard designs on the wheel could not have been made possible without an extensive class of potters whose kilns have been found. Pottery pieces with multi-coloured paintings are believed to belong to the Chalcolithic age. Instances of the manufacture of a variety of pottery fabric are found in different ages. Chalcolithic deposits at the Pandu Rajar Dhibi show a lack of continuity.

Many sites have come to light after 1947 in our attempts to find out new Pre-historic sites in India. These sites have given us not only different varieties of pottery but also the existence of a number of cultural traits. There are many more sites between Saharanpur and Meerut. Kalibangan (Ganganagar district in Rajsthan) is believed to be the Indian Mohenjodaro and is dated 2200 B.C. It produced Red Pottery painted in black and white and white pigments. Of the unusual interests are the circular hearths which resemble the Tandur in the modern Punjab. The Ahar culture (Udaipur-Rajsthan) fills the missing chapter in the fascinating chronological details of the Harappan and post-Harappan cultures. Between Kalibangan (2200 B.C.) and Bharatpur (1300 B.C.) Ahar reveals a culture centre in about 1700 B.C. Big hearths indicating community kitchens and copper discs have been unearthed (as in Iran). The excavations at Ahar indicate the existence of two main classes - the rich and the poor. The pottery discovered in the ruins tells us this interesting tale of economic disparity, a feature brought to light from different excavations in the country in modern times. Here has been found pottery of exquisite finish as well as of the coarse variety. Later phases of the Harappan culture have been traced here. The black and red wares have been found in abundance. The wares found at Ahar and other places in Rajsthan differ from those found in Rupar not only in material but also in design. This



than between the proto-historical cultures and the historical period is not yet fully known. Certain traces of contact between Ahar culture and Anatolia have also come to light. Microliths have also come to light at Ahar.

Ochre-washed low grade pottery lies below the Painted Grey Ware (abbreviated - PGW) (at Hastinapur II) and just above the natural soil. Some archaeologists suggest that the low grade badly fired ochre washed pottery at Hastinapur-I is presumably a late Naga production. Below the PGW (Circa-1000 B.C.) lies Black and Red Pottery associated with a little copper and preceded by a pre-Metal layer ochre-washed pottery. Underneath lies the undisturbed natural soil. Black and Red Ware lies over a more compact area and indicates a more permanent type of settlement of the people. Painted Black and Red ware at Ahar came to be used after the destruction of the Harappan culture in Singh. The Pandu Rajar Dhibi has a distinctive ceramic of its own which is the black and red ware, sometime white painted but often plain. Two ceramic types in two parts of the Ganges Valley at the same time and roughly of the same duration testify to the existence of two different cultures in the valley. Both the PGW and the Red and Black ware are overlain at various sites by the Northern Black Polished Wares (abbreviated-NBP) and therefore it may be suggested that the two cultures lasted between 1200 and 600 B.C. In the South western corner of the Kuru Panchal region, the Black and Red ware makes a transient appearance and is overlain by the PGW at Noh (Bharatpur) and at Atranjikhhera. At Bikaner and Ahichatra, the two pottery types are coeval which suggest that the two arrived at about the same time. At Kausambi the PGW makes a temporary appearance between the Black and Red ware and the NBP but it lacks the richness of Hastinapur and Ahichatra. The Atranjikhhera pottery sequence fits in with Hastinapur. Alamagirpur (Merrut - U.P.) has also shown that the PGW culture and is believed to be associated with the Indo-Aryan. The two pottery types represent two techniques of manufacture. The Black and Red ware,



including the white painted, were the products of placing the pots in inverted position whereby the inner walls and exterior around the rim turned black leaving the outside of the bottom swell red. The PGW were baked in kiln whose heat was gradually reduced so that the ware did not turn red but became ashy to dark grey. The NBP succeeded both the technique chronologically and represented an advanced technique in which unfired pots were dipped in a suspension of ferruginous material and the initial kiln temperature was raised to about 800 degrees centigrade.

It is doubtful if the Aryans introduced any special pottery of their own. They adopted the plan and technique of the pottery wherever they went. No particular and specific Indo-Aryan technique has yet come to light. The grey pottery of Raichur as well as the occasional piece of bronze found with a pottery of different type on the Narmada is assigned to the Aryan penetration. All along the Narmada, the Malwa ware is spread. It has been suggested that this pottery might have been brought about and spread by the Haihayas or one of the branches of the Yadavas. The Aryan penetration south of the Vindhyas may be related to the southern Megaliths with which we are not concerned here. The PGW is associated with the Aryans. PGWs have been dug up from about forty sites in India and is tentatively placed at Circa 1000 B.C. According to Wheeler the Indus gave India its name and the Ganges its faith. The Aryans picked the technique of their pottery from the place they went and naturally they must have adopted a number of varieties. The archaeologists feel inclined to identify the PGW with the Aryan pottery. Kosambi (D.D) calls it Puru pottery whereas Sankalia (H.D.) holds the view that the PGW is associated with the arrival of the Aryans, more possibly with the Bharatas who occupied the Ganga-Yamuna valley. The association of the PGW with iron is remarkable. It was ultimately as a result of the increased use of metal that drove out of the painted ware in favour of the plain and utilitarian grey pottery. The PGW has been taken as the specimen of the Kuru-Panchal ceramic and has assumed the position of Aryan pottery.



PGWs have been found at Hastinapur, Ahichatra, Rupa, Puranaquila (New Delhi), Ujjain, Sravasti, Kausambi, Vaisali and at various other places. These far flung places show the contact which the PGW people had with the peoples of the Punjab, Rajasthan, Malwa, Uttar Pradesh, Bihar and Bengal. No PGW has been found east of Ahichatra and Kampilya except those at Kausambi and Vaishali which are both degenerate types. The absence of PGWs from about fifteen NBP sites in the middle and the lower Ganges valley raises serious doubts about the Aryan conquest and Colonisation of the valley outside the Kuru-Panchal area. Both the conquerors and the colonisers could not have left behind their pots and pans at their original homes. The PGW culture is tentatively placed between the Harappa Culture (2200 B.C.) and the NBP Culture (600 B.C.), and is therefore believed to have filled up the gap of the culture sequence which was so far described by the archaeologists as the Dark Age in Indian Pre-history. Though the evidence is entirely circumstantial, the association of the PGWs with the traditional Mahabharata sites is insignificant and its specialised distribution the Ganges Valley is all the more striking. There were about twenty Grey Ware culture sites between the Saraswati Valley and Bikaner. Frontiers of the Narmada and the regions south of it were unaffected. The end of the PGW is denoted by the success of the NBP whose middle layers at Kausambi is dated at 500 B.C. and coincides with the dates of Mahavira and Buddha.

White painted black and red ware has been dug up from Sohgaora (U.P.), Chirand (Bihar) in addition to the finely painted ones unearthed at Pandu Pajar Dhibi. Plain black and red wares have been found at Sonapur (Gaya), Kausambi, Ahichatra, Atranjikhara and at Noh (Bharatpur). Black and Red ware discovered from Sonapur (Gaya) is earlier than the NBP. It has been suggested that Gossala, Mahavira and Buddha confined their wanderings to the Black and Red area thereby emphasising the cultural unity of the region. Ajivikaism, Jainism and Buddhism marked the culmination of an independent culture. NBP is coeval with the



supremacy of Magadha and is associated with Mauryan and the post Mauryan level. The Buddhist Bhiksus took the NBP to far off in places in south west to Nerasa, Nasik and Kolhapur; or in the south as in Amravati; west as far as Somanatha; east as far as Gauda and Pandua; in north in Taxila and Charsada and as far as Udigrama in the Swat valley in Afganistan. Between Sixth century B.C. and Third Century B.C., we come across the material culture comparable with that of the NBP. The recent excavations have shown the distribution of the NBP from Nasik to Bangarh and Sisupalgarh and from Taxila to Amravati. The origin of the NBP is traced in the central Ganga plains. Its ceramic varieties are yet to be systematised and published. It has a strikingly polished surface having almost a lustrous metallic finish. It ranges in colour from coal black through steel grey or silver to golden colours. The distinctive glossy brilliance of the NBP has naturally raised ~~an~~ obvious enquiries as to the method of its manufacture. It was an excellent grade of pottery and was first made as trade ceramic. It is difficult to say whether this pottery went from north to south and from west to east or in the reverse direction.

We have no definite information as to who introduced the PGW and the NBP. The exact date of the same is also not known. Other aspects of the peoples who might have introduced these two important types are equally unknown. But the fact remains that these two types do represent certain particular cultural characteristics. Problems of identification are of the course there. Do these groups like the Grey Ware, the Black and Red ware with paintings in white from Ahar, the lustrous Red ware from Rangpur and the particular Somnath Ware with inturned rims and designs in panels over a matt surface represent merely cultural elements or certain groups of peoples or tribes ? This is a very pertinent question which awaits enquiry and a logical answer. The Rangmahal (Bikaner) pottery offers a distinctive type. It is dark red and extremely well baked. Its surface is painted with black designs and there are a large variety of shapes and designs. Red polished wares often decorated with incised or stamped designs reminds us of similar



well made Harappan pottery. Hanna Rydh attributed to the Saka-Kushana pottery of the Second-Third century A.D. Greek black wares entered India from Taxila. A trade pottery was fired by complicated process in permanent kilns and wines were exported in such pots.

The Ochre-washed pottery, associated with the copper heard, was followed by the PGW which dominated the field for about four or five centuries. Near about 600 B.C., we find pre-NBP deposits at Kausambi. PGW forms a homogenous group belonging to a well defined industry and may therefore be used as a cultural label. In between the PGW and the NBP, the Black and Red pottery held the field for sometime in a definite cultural area where the leaders of the reform movements in the Sixth century B.C. preached. The NBP succeeded and held the field for a considerably longer period and is believed to have been succeeded in the Second Century B.C. by the wheel turned Red Ware Industry.

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# ASSOCIATED ANTIQUITIES WITH THE BLACK-AND-RED WARE CULTURE

By

Naseem Akhtar

In the post-Harappa period, many new cultures, characterized by their distinctive pottery industries, came on the scene of Western and Central India. The Black-and-Red ware culture, which emerged in South eastern Rajasthan, seems to be earliest in the series.<sup>1</sup> It has been named by archaeologists as the Banas or Ahar culture<sup>2</sup> as its main focus, with type site Ahar, seems to be in the Banas-valley. The influence of this culture has been felt at all the neighbouring and contemporary cultures. The bearers of this ceramic-technique reached even in the upper and middle Gangetic-valley. The earliest known evidence<sup>3</sup> of this potting-technique in India, has come from Lothal, where it has been found within the matured Harappa culture. Its position at Lothal and other Harappan and Late Harappan sites seems to be of a subsidiary nature. Whereas in the post Harappa period, in the valley of Banas, it secured its independent cultural status. However, its presence at Lothal and a few Harappan elements, observed in the chalcolithic Black-and-Red ware culture,<sup>3a</sup> may be taken as a link and cultural overlap between these two.

The Black-and-Red ware constitutes only one of its components. To know the exact nature of the culture, it is necessary to make a study of its associated antiquities and their manifestations on the life of the people. Hence, on the available data, excavated from various Black-and-Red ware culture sites, an attempt has been made here.

The richest yield of the material remains of the period is of course its potteries. The chief ceramic industry was the Black-and Red ware, sometimes painted in white colour. In the beginning, such as at Ahar and Giluni, we find rich paintings and limited types which include bowls, dishes, basins, lota-shaped vessels, etc. whereas, in the later stage of its life, painting decreased and a few new types, such as dishes-on-stand, channel spouted or lipped bowls or basins,



2.

perforated bowls, vessels, pottery-stands, etc., were introduced in this fabric at Chirand and Pandu-Rajardhibi. It seems that in the early stage, it was used strictly for eating and drinking purposes, while in the latter its range of function seems to have increased. Besides, a number of other ceramic fabric have also been found which testify to the variety of technique. Most of them are treated with a fine slip and represent a wide range of decorative elements.

Most popular ceramic industry of the period was the Red Ware. It has been found at all the places with different sub-varieties, slipped or unslipped. The slipped specimens show orange, tan, chocolate or brown hues. Fine to coarse-grained clay was used. Besides popular shapes in bowls, basins and storage vessels, it shows a wide range. Dishes were less popular. A remarkable shape found at Ahar is the vase with sloping corrugations and possibly a pedestal-base. A vase with stem looks like a chandelier or double bowl. The dishes-on-stand have been found at Ahar, Gilund and Chirand. The stems were hollow or solid either with a corrugation or plain. Another type is represented by a basin with small channel-spout at Ahar, with cut-spout at Gilund or a lip at Sonpur and Chirand. A few interesting shapes, for the first time in this culture, occurred at Chirand, which include spouts, lipped jugs and three legged perforated bowls. Shoulder portions of a few vases at Sonpur and Chirand and border of the bases of a few dishes-on-stand bear paintings in cream solid dots. A few sherds, painted in yellowish colour, have been found at Ahar. Some of the sherds at Rajghat are also painted in orange or white pigments. Other decorative elements in the red ware include incised linear patterns, applied roundels and wavy bands.

The next popular pottery seems to be the Black ware. Though it has not been found at Ahar so far, but its association at Gilund and comparable sites in the Gangetic-valley may suggest its later introduction. It followed the types and painting tradition of the Black-and-red ware. Common types, found at all the places, are bowls and dishes. Besides, a corrugated stem, possibly of a bowl-on-stand, was



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found at Chirand and a beak-shaped bridge spout at Pandu-Rajardhibi.<sup>17</sup>  
 Sometimes it was painted in white pigment. At Gilund, the painting was  
 done on the exterior or interior or both with geometrical designs.  
 Whereas at Chirand,<sup>18</sup> Sonpur<sup>19</sup> and Pandu Rajardhibi<sup>20</sup>, the painting was  
 confined on the inner surface. A few pieces bearing incised and pin-  
 hole decorations have been found at Mahisadal.<sup>21</sup>

The Grey ware, treated either with a slip or burnished  
 was also manufactured in the period. At Ahar, the types included lid or  
 a knobbed triangular or clamps-like hold, basin, globular pot, dish-on-  
 stand, perforate bowl on a broad hollow stem and base, animal-headed  
 handles, etc. Gilund<sup>22</sup> has yielded lipped or lugged basin and vase with  
 strap handle.<sup>23</sup> A jug or tumbler, found at Chirand, may also be mentioned  
 here.

A few pieces of the cream-slipped ware, coated with a  
 fine thick slip of cream to greenish white colour, have been found at  
 Ahar and Gilund. Only two shapes, i.e. small globular pot and a bowl  
 with concave sides, have been recognized at Ahar.<sup>24</sup> Among the designs,  
 painted in crimson blackish red, mention may be made of a dancing figure<sup>25</sup>  
 and an animal with stippled body, which occurred at Gilund. It is  
 interesting to refer here that a unique specimen representing possibly  
 a miniature sarcophagus has been found at Chirand. It is coated with  
 a thick creamish slip and painted in crimson red with small solid  
 dots over the entire remaining body. A bull with an elongated body and  
 prominent horns, was drawn over the dots. Its exact relationship with  
 the cream-slipped ware is to be ascertained.

The Buff ware, in a limited number has been found only  
 at Ahar and it shared the types of the cream-slipped ware.<sup>26</sup> It bears  
 distinct greenish grey slip.

A chocolate or buffish ware, coated with a fine thick  
 slip in creamish white has been found at Pandu Rajardhibi.<sup>27</sup> Whether  
 it represents a variant of the buff ware referred to above is not known.  
 The types included bowls, vases, etc., and the designs, solid triangles  
 and ladders.



4.

The lustrous Red ware formed another associated fabric<sup>28</sup> of the period. It has been found at Ahar in the topmost phase, which bears close resemblance<sup>ance</sup> with the same ware found at Rangpur. At Pandu Rajardhibi a kind of such pottery has also been found. Ahar has yielded<sup>29</sup> dish-on-stand and a large globular vessel. At the latter site, the types included shallow bowl and basin besides footed cup or beaker or bowl-on-stand<sup>30</sup>. They bear painting either in black or greyish white pigment and the designs included solid triangles, hatched diamonds, <sup>e</sup>stipped chevrons<sup>n</sup>, lattices, etc.

Ahar and Gilund has yielded <sup>a</sup> few specimens of the Malwa ware from their latest levels. The common type was dish-on-stand<sup>31</sup>. The painted designs, at Ahar, included bands, wavy lines and loops, whereas the <sup>pieces</sup> ~~pieces~~ at Gilund are painted with a row of cross-hatched<sup>32</sup> lozenges. This fabric was a characteristic pottery industry of the central Indian (Malwa) Chalcolithic culture.

A single sherd of the Jorwe ware has also been recovered<sup>33</sup> from Ahar I B. A polychrome ware painted in black, bright red and white pigments on red background has been found at Gilund<sup>34</sup>.

Thus, it appears that a variety of pottery fabrics and shapes, for the manifold house hold uses, were manufactured during the period. The whole range shows three functional group- those which were for every day rough use, those for a refined use and lastly probably for ceremonial or ritualistic use. The storage jars, of various sizes, basins, globular pots, bowls, dishes, etc. may be included in the first category. In the second, rimless bowls channel-spouted or lipped basins or bowls, dishes-on-stand etc., and in the last group, channel - spouted or lipped bowls or basins, spouted - vessels, three-legged perforated bowls, lipped jugs, sarcophagus etc. may be included. It may be noted that the potters used different types of clay as desired or required by a particular fabric or type. They were <sup>manu-</sup>factured on wheel, or by hand or with a combination of both. Some pots were made in two or three parts separately and then luted together. The potters knew the method of the inverted firing as also of closed and open kilns.



## 5.

As regards the structural activities of the period, a clear and uniform picture has not come so far. Generally, the houses were framed by wooden or bamboo posts. Around these <sup>35</sup> were put reed or bamboo screens, then they were plastered with mud <sup>36</sup> which is evidenced by the remains of lumps of clay, bearing reed or bamboo impressions, <sup>37</sup> found at Ahar, Chirand, Sonpur, Oriup and Pandu Rajardhibi. Mud or <sup>38</sup> mud-bricks were also used for making houses at Ahar and Gilund. A few <sup>39</sup> of them were plastered with clay, sometimes mixed with lime. One <sup>40</sup> of the such walls at the latter site was decorated with zigzag finger-mark. <sup>41</sup> Kiln-burnt bricks were used at Gilund only.

Regarding the exact plans of the houses, it may be said that they appear to be round, square or rectangular. Floor of the houses were made up of clay mixed with silt and sometimes were also paved <sup>42</sup> with river gravel. At Sonpur, and Pandu Rajardhibi, however, it was further coated with lime in order to make them smooth, firm and insect proof.

How the houses were roofed, could not be ascertained <sup>43</sup> precisely. However, it appears that they <sup>44</sup> were supported on wooden or bamboo posts. The houses seem to have been divided into rooms, one of which probably served as the kitchen. The latter was equipped with pot-rests, querns, storage-pits, etc. At Ahar, large-sized hearths with a <sup>45</sup> unit of two or four cooking positions have been found. The former example was made on a square platform and decorated with depressed chevrons. In both the cases, knobs were found on the inner walls to support the pot kept on the oven-mouth. At Gilund a clay-lined pit, <sup>46</sup> which might have been used as an oven, has been found. Single-mouthed <sup>47</sup> clay hearths and oblong or squat hearths, have been found at Pandu Rajardhibi and Atranjikhara respectively.

The black-and-red ware people practised agriculture, hunting and fishing for their livelihood. We have not found any agricultural implement from the chalcolithic levels, but it seems that cultivation was known to them. The occurrence of querns, rubbers <sup>48</sup> at Ahar and Gilund and pounders at the former site may indicate a <sup>49</sup> grinding activity. Remains of charred rice have been found at Sonpur



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and Mahisadal. Husk<sup>48</sup>, mixed with the clay of some of the pottery or its impression on the latter have been found at different places. S.B. Deo, after making a careful observations of the potteries from Ahar, has identified some kind of wheat and rice husk. The impression of husk in the pottery fragments<sup>e</sup> found at Pandu Rajardhibi, ~~was~~<sup>was</sup> scientifically analyzed and they were identified as those of cultivated paddy (*Oryza Sativa* L. Graminae<sup>49</sup>). Presence of large vessels at various places and storage pits at Gilund<sup>50</sup> may go to suggest that grains were stored.

Thus, it may be inferred ~~to~~<sup>as the</sup> that cultivation of wheat and paddy was practised ~~like~~<sup>did</sup> Mayadulians. Large number of animal and fish bones have been found at different sites in association with hunting and fishing tools. These evidences may go to prove that people were non-vegetarian.

Animals were domesticated, as the practice of cultivation and occurrence of humped terracotta bulls may go to suggest.

Hunting was done on a large scale. They used copper, bone and stone tools for this purpose. Copper axes of flat socketless variety have been found at Ahar<sup>50</sup> and Mahisadal<sup>51</sup>. Bone tools have not been found so far either at Ahar or Gilund, but other sites in the Gangetic valley, particularly in Bihar, ~~where~~<sup>it</sup> has been found in a fairly good number which included arrow-heads of tanged and socketed varieties.

Microlithic tools, a characteristic of central Indian Chalcolithic cultures, have been found only in limited number. Whatever may be their quantity, most of them were probably used for hunting and the allied purposes. Evidences show that a few blades and fluted cores either of chert or chalcedony, have been found at Ahar<sup>52</sup> and Gilund<sup>53</sup>. A few blades and points have also occurred at Sonpur and Chirand. More or less the same story has been repeated at other sites also. It continued to be used even after the introduction of iron at Mahisadal and Pandu Rajardhibi. It may also be mentioned here the occurrence<sup>occur</sup> of stone sling-balls at Gilund<sup>54</sup>. They were also probably used in hunting purposes.

Fishing was also practised, as most of the sites were situated



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near river banks. A fish hook of copper has been recovered from Pandu-  
 Rajardhibi.<sup>54</sup> Oriup has yielded a large number of fish-hooks (harpoons)  
 of bone. Mention may also be made here of a few pieces of burnt clay,  
 found at Atranjikhhera, which were probably used as net sinkers.<sup>55</sup> Thus  
 evidences go to prove that fishing was also one of the main sources of  
 livelihood. It may also be mentioned here that baskets and screens made  
 of reeds or bamboo, a practice still followed, might have been used by  
 the black-and-red ware people for fishing.

It seems that the demand for terracotta figurines was not popular,  
 as only a few examples have come to light so far. However, it may be  
 divided into two groups---- human and animal. In the first category, a  
 torso of male - figure, probably in a dancing pose, has been found at  
 Pandu-Rajardhibi.<sup>56</sup> Another solitary example of a female-figure, with  
 prominent breasts, have come from Oriup. Among animal figurines, a bull  
 with a prominent hump and long bones, has been found at Ahar and Gilund.<sup>57</sup><sup>58</sup>  
 Other specimens include a ram and stylized figures discovered at the  
 former site. At Chirand, a broken bird has been found.

The black-and-red ware people used different varieties of ornaments.  
 Terracotta and stone beads were very popular. Beads of the former  
 material were biconical, lobular or areca-nut shaped. At Ahar, they  
 bear incised decorations.<sup>59</sup> Other sites have yielded only plain varieties.  
 Beads, made of semi-precious stones, have been found almost at all sites  
 and materials included, carnelian, agate, chalcedony, quartz, crystal,  
 etc. Beads made of steatite, faience and copper were rare. These  
 beads must have been strung into different varieties of necklaces, a  
 practice even followed today. Copper rings were also used. <sup>They have</sup>  
 found at Ahar,<sup>60</sup> Atranjikhhera and Pandu Rajardhibi,<sup>61</sup> <sup>and were</sup>  
 were also used.<sup>62</sup>  
 Bangles made of copper, have been found at Ahar, Oriup, Pandu Rajardhibi<sup>63</sup><sup>64</sup>  
 and of bone at Mahisadal. Sonpur and Chirand have yielded copper wires,  
 which were probably used for making rings. Besides, Mahisadal and Atranji-  
 khhera have yielded bone combs. A few unique specimens for personal decor-  
 ation have been found at Pandu Rajardhibi, i.e. copper eye-pencils.<sup>65</sup>

We do not know about their dresses. However, some of the terracotta  
 beads, referred to above, may be identified with spindle-whorls, which



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bear testimony to their knowledge of spinning. Hence, it may be suggested that spinning and weaving was practised by the black-and-red ware people.

Copper-smelting was one of the main industries of the period. It has been suggested that the copper was smelted at Ahar from the very beginning as it is situated in the vicinity of ancient copper workings.<sup>66</sup> This suggestion has been corroborated by the discovery of copper tools and sheet. Further it may be strengthened by Hedge's work on chalcolithic metallurgy.<sup>67</sup> According to him, the people in the Banas-Valley might have used khatri ores as a source of copper in the pattern of ore and anti-facts shows. It is not clear whether copper was smelted at other sites also as scientific examination of the objects has not been made, so far known. However, its rarity at other places may suggest that it was brought by the immigrants from the Banas-Valley.

Bone tool making industry was the back-bone of chalcolithic black-and-red ware people in the Gangetic-Valley. It may be mentioned here that bone-tools in manufacturing stage, surpasses the number of the finished tools at Sonpur, Chirand and Pandu Rajardhibi. Besides its hardness and easy workability, the use of bone was probably due to the rarity of copper. It appears that bone was used as a substitute to copper in the middle Gangetic-Valley, particularly in Bihar.

We do not know about trade, but some inference may be drawn. The black-and-red ware has been found in association with contemporary chalcolithic cultures, characterized by Malwa and Jorwe wares. If it was imported there from the main centre, as Dr. Sankalia has suggested in the case of its occurrence at Navadatoli,<sup>68</sup> we may say that there was a trade relation with contemporary authors. Further, it may also be mentioned that Malwa, Jorwe and lustrous Red ware of Rangpur fabric, have been found in the Banas-Valley. For transport of men and goods, wooden carts might have been used as terracotta wheels found at Prahladpur may suggest.<sup>69</sup> It may also be mentioned that the use of copper was possible only in so far as regular trade was organized. The tetrahedral objects found at Mahisadal have been identified as weights.<sup>70</sup> If so, we may

suggest that there was some kind of weight system. But meagre evidences CC-0. In Public Domain. UP State Museum, Hazratganj. Lucknow



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show that barter-system was practised. The people had to exchange their surplus products for metal, steatite, faience and other things of interest.

The basis of their economy was, ofcourse, copper-smelting, cultivation, bone-tool making, besides hunting and fishing. The large settlement must have included, in addition to primary producers, a variety of full-time specialists. Metal-smelting and the use of wheel for manufacturing pottery has been regarded as evidences of specialization of labour. In a nut-shell, two broad classes in society may be recognized. Firstly, agriculturists and collectors of food, and secondly, the full-time specialists such as potters and smiths.

It has been suggested by archaeologists that the existence of chief-  
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ship may be inferred if one house in a settlement is conspicuously large. If so, the larger house-units, made of mud-brick with a stone rubble foundation and of kiln-burnt bricks at Ahar and Gilund respectively, may be identified with the houses of chiefs or group-leaders. In this connection, it may be mentioned that in the present day tribal communities and even in a small unit of a nomadic people, we may notice the presence of a chief. Hence, it may be suggested that there were some kind of chief at Gilund and Ahar. Perhaps, he was responsible for the safety of land and lives of cattle and men. As a reward, he gets a share atleast of the social surplus.

In their leisure hours, people played with games, as terracotta gamesmen have been found at Gilund, which included variety of heads including one of ram. The discovery of a male-figure, at Pandu Rajardhibi in a dancing pose and a sherd found at Gilund, showing the dancing-figure may testify to their knowledge of dancing. Probably they practised group-dance as was the case with other chalcolithic cultures.

In the present state of our knowledge, the superstitious customs and beliefs of the people cannot be made out precisely. Evidences regarding the disposal of dead are meagre and later in the life of the people. A few post-cremation pit-burials and large urns containing bone pieces have been found at Sonpur. At Pandu Rajardhibi, both extended  
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and secondary human-burials were practised. Evidences known so far may



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suggest that the black-and-red ware people originally cremated their dead bodies. However, the funerary-goods associated with these burials may suggest a belief in future life. Probably, bulls were regarded sacred and may be considered to be a cult-object. Worship of mother-Goddess and phallus was also practised by them. On the whole, it may be regarded that they were the worshippers of fertility-cult. Painted designs on pottery representing antelopes and stylized figures may suggest its association with some magic. It may be explained by the belief held by the hunters that by representing the animal pictorially, they were thus captured in advance by the power of magic. Further, some pottery shapes, referred to earlier, might have been used for some ritualistic purposes.

A study of the associated antiquities of the black- and red ware chalcolithic culture reveals that its earliest concentration and focus was in the Banas-Valley. Next area of attraction seems to be the middle Gangetic-Valley, particularly Bihar, with certain differences. On the available data, two major variations ---- the Banas-Valley proper with Ahar and Gilund, and the middle Gangetic-Valley with Chirand and Pandu Rajardhibi, may be recognized on the strength of certain individualistic features that were inherent or developed in these regions, but shared some socio-economic level. However, a few differences may be noted here. The inhabitants of the Banas-Valley lived in houses made of reed or bamboo screen, mud-bricks or kiln-burnt bricks. They mainly relied upon copper-metallurgy, agriculture and hunting. Whereas in the latter zone people lived in the houses made of reed or bamboo screens only. The evidences for metal working are meagre though not wanting. Fishing and hunting was done on a larger scale as evidenced by the higher frequency of its tools. Bone tools were manufactured and played a dominant role in the economy of the people.

In the field of ceramic assemblage too, these differences may be marked. In the Banas-Valley, it shows a wide range both in fabric and decorative elements. In the Gangetic-Valley, we have not found cream slipped, Buff, Malwa, Jorwe and other finer wares which were associated



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with the vulture in the Banas- Valley. In the Gangetic Valley, a few new types, which have been mentioned earlier, were made. The black- and red ware, itself shows differences. In the Banas- Valley we find limited types, mostly painted either on interior or exterior or both. Whereas, in the latter zone, the frequency of painting decreased and confined on the inner side only. Further, a few new types were also introduced in this fabric. Further, we do not know, how the people in the Banas- Valley, disposed their dead. Whereas, in the latter zone, burial-custom has been noticed, though the evidences are meagre.

In spite of these differences, they seem to have shared more or less equal socio-economic level. However, on the basis of these differences we may divide the chalcolithic Black-and-Red ware culture into two zones, western and eastern. It may be proposed that the former zone should be christened as the Ahar Culture and the latter as the Gangetic-Ahar culture with the type sites Ahar and Chirand respectively. The dates supplied by the C- 14 determinations have moved that the former zone was inhabited earlier.

In the black-and-red ware culture, we find small settlements, when compared with those of Harappa culture. However, difference of material remains and thickness of habitational strata and area covered by them may go to suggest at least two types of settlement, i.e., rural and urban, in the broader sense of the terms. Contrast in equipment used by the urban population and that used by the rural people, is very sharp even today. It appears that pottery with basic types and poor cultural equipment found at Sonpur, Atranjikhhera, Rajghat, Prahladpur, etc., may represent small rural habitations of less skilled people. Whereas, Ahar, Gilund, Chirand and Pandu Rajardhibi, with their variety of pottery fabrics and types along with other rich cultural assemblage, may be taken as main centres, inhabited by more advanced and skilled craftsmen. These sites might have represented the urban settlements of the time.

In the present state of our knowledge, it is very difficult to assign its authorship to any particular racial group. Firstly, due to the non-availability of human-burials excepting a few at Pandu Rajardhibi and Sonpur. Secondly, the insufficient researches in the



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field. However, two sets of theories have been propounded. According to one group, they were Dravidians, whereas in the opinion of another set of scholars they may be identified with the early wave of the Aryans. It is not possible to go into details here. However, it may be humbly suggested that anthropological, linguistic, vedic, Avestan and Puranic evidences should also be taken into account along with the cultural contact with others.

A study of the associated antiquities and their manifestations on the life of chalcolithic black-and-red ware people, shows that the culture was widely distributed. Its early concentration was in the Banas-Valley, whereas in due course its focus shifted to the middle Gangetic-Valley, particularly in Bihar. The culture in the former zone may be named as the Ahar Culture and in the latter as the Gangetic-Ahar Culture. Two types of settlement have been noticed, i.e., rural and urban. The basis of their economy was copper-smelting, cultivation besides pottery-making, hunting and fishing. The whole society was divided into two main classes—food producers or collectors and full-time specialists. They were peace-loving, resided in small houses and worshipped fertility cult. They existed for a long time. In a evolutionary process, with the advent of iron, the chalcolithic people evolved into an urban civilization. The evolutionary process and final development of the black-and-red ware people is well attested in Bihar. Iron tools and slags occurred in a pre-N.B.P.—cum post chalcolithic black-and-red ware levels at Chirand and Sonpur. Now their economy was based on a firmer ground, i.e. iron. Its use gave them a new power and a new sense of security. Archaeological excavations have shown that with the advent of iron, the black-and-red ware people moved in different directions and by the end of 7th cent. B.C., practically whole of India was unified, for the first time, by their hands. Excavations at the black-and-red ware sites have shown that in the 7th cent. B.C., the final stage of their development took place i.e., the invention of a new ceramic technology, known to archaeologists as the N.B.P. ware.



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## POTTERIES IN THE BRAHMANICAL LITERATURE

(upto 2nd Century B.C)

M. S. Pandey

The Brāhmanical literature covers a long range of time and space. It starts some time roughly in the 16th Century B.C. and comes down to the 9th or 10th Century A.D. or even later. This paper has, however, taken into account the works which were composed till the second century B.C. only. The difficulty in dealing with such works is quite obvious. The Brāhmanical literature is of sacerdotal nature. It deals more with sacrifices and rituals than with domestic problems. Even the Grihya <sup>śū</sup>śā<sup>tr</sup>s, which are expected to throw more light (as their names show) upon the contemporary society and domestic problems, are much more religious in nature. We should not therefore expect to get much material to build <sup>an</sup> ~~are~~ archaeological edifice from such works. As the Brāhmanical works cover a long range of time and were composed in different parts of the country, it is naturally expected that we would get various types and sizes of potteries mentioned therein. Here too, we are disappointed. The potteries once mentioned in the R̥gveda, Yajurveda or any other works are repeated in the same tune without adding anything new to them. To be more explicit, I would like to explain that the potteries referred to in the R̥gvedic Samhitā occur again and again the Brāhmanas and Sūtras, but we get no information about their shape, size and colour. It is true some times new names of potteries are added, but nothing is said about their types. So we are not in a better position regarding the potteries of even later times. The trouble lies in the nature of the works itself as I have already stated. In the non-Brāhmanical literature, especially in the Buddhist works, which are almost contemporary of later



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Brāhmanical literature, we find more graphic accounts of the potteries than do we find here.

The Brāhmanical literature is almost silent about the technique and materials of which the potteries were made. Sometimes, but not frequently we find it mentioned that a particular ware was made of wood or clay.

By the study of the Brāhmanical literature, I have been able to collect some information regarding the potteries which I will discuss in this paper. If the potteries mentioned in the literature could be identified with the potteries discovered by the spades of archaeologists, we could have known more about their utility and function in the society. But no step has been probably taken in this direction. Scholars of both the fields, literature and archaeology are moving on two parallel lines which can never meet. An archaeologist is sceptical about materials mentioned in the literature unless he finds out something from the womb of the earth. A man of literature relies ~~upon~~ more upon literature and gives scant respect to archaeological finds. If ~~an~~ archaeologist, and ~~a~~ <sup>Traditional Scholars</sup> ~~literature~~ work in unison, I think they will be able to throw more light upon the progress of humanity than they have done so far. Owing to paucity of time, I myself, have not tried to identify the potteries mentioned in the Brāhmanical literature with the potteries unearthed at different sit.s.

The earliest Brāhmanical literature, that is, the Rigveda refers to the potteries such as <sup>2</sup> <sup>3</sup> <sup>4</sup> <sup>5</sup> <sup>6</sup> <sup>7</sup> <sup>8</sup> <sup>9</sup> <sup>10</sup> <sup>11</sup> <sup>12</sup> <sup>13</sup> <sup>14</sup> <sup>15</sup> <sup>16</sup> <sup>17</sup> <sup>18</sup> <sup>19</sup> <sup>20</sup> <sup>21</sup> <sup>22</sup> <sup>23</sup> <sup>24</sup> <sup>25</sup> <sup>26</sup> <sup>27</sup> <sup>28</sup> <sup>29</sup> <sup>30</sup> <sup>31</sup> <sup>32</sup> <sup>33</sup> <sup>34</sup> <sup>35</sup> <sup>36</sup> <sup>37</sup> <sup>38</sup> <sup>39</sup> <sup>40</sup> <sup>41</sup> <sup>42</sup> <sup>43</sup> <sup>44</sup> <sup>45</sup> <sup>46</sup> <sup>47</sup> <sup>48</sup> <sup>49</sup> <sup>50</sup> <sup>51</sup> <sup>52</sup> <sup>53</sup> <sup>54</sup> <sup>55</sup> <sup>56</sup> <sup>57</sup> <sup>58</sup> <sup>59</sup> <sup>60</sup> <sup>61</sup> <sup>62</sup> <sup>63</sup> <sup>64</sup> <sup>65</sup> <sup>66</sup> <sup>67</sup> <sup>68</sup> <sup>69</sup> <sup>70</sup> <sup>71</sup> <sup>72</sup> <sup>73</sup> <sup>74</sup> <sup>75</sup> <sup>76</sup> <sup>77</sup> <sup>78</sup> <sup>79</sup> <sup>80</sup> <sup>81</sup> <sup>82</sup> <sup>83</sup> <sup>84</sup> <sup>85</sup> <sup>86</sup> <sup>87</sup> <sup>88</sup> <sup>89</sup> <sup>90</sup> <sup>91</sup> <sup>92</sup> <sup>93</sup> <sup>94</sup> <sup>95</sup> <sup>96</sup> <sup>97</sup> <sup>98</sup> <sup>99</sup> <sup>100</sup> <sup>101</sup> <sup>102</sup> <sup>103</sup> <sup>104</sup> <sup>105</sup> <sup>106</sup> <sup>107</sup> <sup>108</sup> <sup>109</sup> <sup>110</sup> <sup>111</sup> <sup>112</sup> <sup>113</sup> <sup>114</sup> <sup>115</sup> <sup>116</sup> <sup>117</sup> <sup>118</sup> <sup>119</sup> <sup>120</sup> <sup>121</sup> <sup>122</sup> <sup>123</sup> <sup>124</sup> <sup>125</sup> <sup>126</sup> <sup>127</sup> <sup>128</sup> <sup>129</sup> <sup>130</sup> <sup>131</sup> <sup>132</sup> <sup>133</sup> <sup>134</sup> <sup>135</sup> <sup>136</sup> <sup>137</sup> <sup>138</sup> <sup>139</sup> <sup>140</sup> <sup>141</sup> <sup>142</sup> <sup>143</sup> <sup>144</sup> <sup>145</sup> <sup>146</sup> <sup>147</sup> <sup>148</sup> <sup>149</sup> <sup>150</sup> <sup>151</sup> <sup>152</sup> <sup>153</sup> <sup>154</sup> <sup>155</sup> <sup>156</sup> <sup>157</sup> <sup>158</sup> <sup>159</sup> <sup>160</sup> <sup>161</sup> <sup>162</sup> <sup>163</sup> <sup>164</sup> <sup>165</sup> <sup>166</sup> <sup>167</sup> <sup>168</sup> <sup>169</sup> <sup>170</sup> <sup>171</sup> <sup>172</sup> <sup>173</sup> <sup>174</sup> <sup>175</sup> <sup>176</sup> <sup>177</sup> <sup>178</sup> <sup>179</sup> <sup>180</sup> <sup>181</sup> <sup>182</sup> <sup>183</sup> <sup>184</sup> <sup>185</sup> <sup>186</sup> <sup>187</sup> <sup>188</sup> <sup>189</sup> <sup>190</sup> <sup>191</sup> <sup>192</sup> <sup>193</sup> <sup>194</sup> <sup>195</sup> <sup>196</sup> <sup>197</sup> <sup>198</sup> <sup>199</sup> <sup>200</sup> <sup>201</sup> <sup>202</sup> <sup>203</sup> <sup>204</sup> <sup>205</sup> <sup>206</sup> <sup>207</sup> <sup>208</sup> <sup>209</sup> <sup>210</sup> <sup>211</sup> <sup>212</sup> <sup>213</sup> <sup>214</sup> <sup>215</sup> <sup>216</sup> <sup>217</sup> <sup>218</sup> <sup>219</sup> <sup>220</sup> <sup>221</sup> <sup>222</sup> <sup>223</sup> <sup>224</sup> <sup>225</sup> <sup>226</sup> <sup>227</sup> <sup>228</sup> <sup>229</sup> <sup>230</sup> <sup>231</sup> <sup>232</sup> <sup>233</sup> <sup>234</sup> <sup>235</sup> <sup>236</sup> <sup>237</sup> <sup>238</sup> <sup>239</sup> <sup>240</sup> <sup>241</sup> <sup>242</sup> <sup>243</sup> <sup>244</sup> <sup>245</sup> <sup>246</sup> <sup>247</sup> <sup>248</sup> <sup>249</sup> <sup>250</sup> <sup>251</sup> <sup>252</sup> <sup>253</sup> <sup>254</sup> <sup>255</sup> <sup>256</sup> <sup>257</sup> <sup>258</sup> <sup>259</sup> <sup>260</sup> <sup>261</sup> <sup>262</sup> <sup>263</sup> <sup>264</sup> <sup>265</sup> <sup>266</sup> <sup>267</sup> <sup>268</sup> <sup>269</sup> <sup>270</sup> <sup>271</sup> <sup>272</sup> <sup>273</sup> <sup>274</sup> <sup>275</sup> <sup>276</sup> <sup>277</sup> <sup>278</sup> <sup>279</sup> <sup>280</sup> <sup>281</sup> <sup>282</sup> <sup>283</sup> <sup>284</sup> <sup>285</sup> <sup>286</sup> <sup>287</sup> <sup>288</sup> <sup>289</sup> <sup>290</sup> <sup>291</sup> <sup>292</sup> <sup>293</sup> <sup>294</sup> <sup>295</sup> <sup>296</sup> <sup>297</sup> <sup>298</sup> <sup>299</sup> <sup>300</sup> <sup>301</sup> <sup>302</sup> <sup>303</sup> <sup>304</sup> <sup>305</sup> <sup>306</sup> <sup>307</sup> <sup>308</sup> <sup>309</sup> <sup>310</sup> <sup>311</sup> <sup>312</sup> <sup>313</sup> <sup>314</sup> <sup>315</sup> <sup>316</sup> <sup>317</sup> <sup>318</sup> <sup>319</sup> <sup>320</sup> <sup>321</sup> <sup>322</sup> <sup>323</sup> <sup>324</sup> <sup>325</sup> <sup>326</sup> <sup>327</sup> <sup>328</sup> <sup>329</sup> <sup>330</sup> <sup>331</sup> <sup>332</sup> <sup>333</sup> <sup>334</sup> <sup>335</sup> <sup>336</sup> <sup>337</sup> <sup>338</sup> <sup>339</sup> <sup>340</sup> <sup>341</sup> <sup>342</sup> <sup>343</sup> <sup>344</sup> <sup>345</sup> <sup>346</sup> <sup>347</sup> <sup>348</sup> <sup>349</sup> <sup>350</sup> <sup>351</sup> <sup>352</sup> <sup>353</sup> <sup>354</sup> <sup>355</sup> <sup>356</sup> <sup>357</sup> <sup>358</sup> <sup>359</sup> <sup>360</sup> <sup>361</sup> <sup>362</sup> <sup>363</sup> <sup>364</sup> <sup>365</sup> <sup>366</sup> <sup>367</sup> <sup>368</sup> <sup>369</sup> <sup>370</sup> <sup>371</sup> <sup>372</sup> <sup>373</sup> <sup>374</sup> <sup>375</sup> <sup>376</sup> <sup>377</sup> <sup>378</sup> <sup>379</sup> <sup>380</sup> <sup>381</sup> <sup>382</sup> <sup>383</sup> <sup>384</sup> <sup>385</sup> <sup>386</sup> <sup>387</sup> <sup>388</sup> <sup>389</sup> <sup>390</sup> <sup>391</sup> <sup>392</sup> <sup>393</sup> <sup>394</sup> <sup>395</sup> <sup>396</sup> <sup>397</sup> <sup>398</sup> <sup>399</sup> <sup>400</sup> <sup>401</sup> <sup>402</sup> <sup>403</sup> <sup>404</sup> <sup>405</sup> <sup>406</sup> <sup>407</sup> <sup>408</sup> <sup>409</sup> <sup>410</sup> <sup>411</sup> <sup>412</sup> <sup>413</sup> <sup>414</sup> <sup>415</sup> <sup>416</sup> <sup>417</sup> <sup>418</sup> <sup>419</sup> <sup>420</sup> <sup>421</sup> <sup>422</sup> <sup>423</sup> <sup>424</sup> <sup>425</sup> <sup>426</sup> <sup>427</sup> <sup>428</sup> <sup>429</sup> <sup>430</sup> <sup>431</sup> <sup>432</sup> <sup>433</sup> <sup>434</sup> <sup>435</sup> <sup>436</sup> <sup>437</sup> <sup>438</sup> <sup>439</sup> <sup>440</sup> <sup>441</sup> <sup>442</sup> <sup>443</sup> <sup>444</sup> <sup>445</sup> <sup>446</sup> <sup>447</sup> <sup>448</sup> <sup>449</sup> <sup>450</sup> <sup>451</sup> <sup>452</sup> <sup>453</sup> <sup>454</sup> <sup>455</sup> <sup>456</sup> <sup>457</sup> <sup>458</sup> <sup>459</sup> <sup>460</sup> <sup>461</sup> <sup>462</sup> <sup>463</sup> <sup>464</sup> <sup>465</sup> <sup>466</sup> <sup>467</sup> <sup>468</sup> <sup>469</sup> <sup>470</sup> <sup>471</sup> <sup>472</sup> <sup>473</sup> <sup>474</sup> <sup>475</sup> <sup>476</sup> <sup>477</sup> <sup>478</sup> <sup>479</sup> <sup>480</sup> <sup>481</sup> <sup>482</sup> <sup>483</sup> <sup>484</sup> <sup>485</sup> <sup>486</sup> <sup>487</sup> <sup>488</sup> <sup>489</sup> <sup>490</sup> <sup>491</sup> <sup>492</sup> <sup>493</sup> <sup>494</sup> <sup>495</sup> <sup>496</sup> <sup>497</sup> <sup>498</sup> <sup>499</sup> <sup>500</sup> <sup>501</sup> <sup>502</sup> <sup>503</sup> <sup>504</sup> <sup>505</sup> <sup>506</sup> <sup>507</sup> <sup>508</sup> <sup>509</sup> <sup>510</sup> <sup>511</sup> <sup>512</sup> <sup>513</sup> <sup>514</sup> <sup>515</sup> <sup>516</sup> <sup>517</sup> <sup>518</sup> <sup>519</sup> <sup>520</sup> <sup>521</sup> <sup>522</sup> <sup>523</sup> <sup>524</sup> <sup>525</sup> <sup>526</sup> <sup>527</sup> <sup>528</sup> <sup>529</sup> <sup>530</sup> <sup>531</sup> <sup>532</sup> <sup>533</sup> <sup>534</sup> <sup>535</sup> <sup>536</sup> <sup>537</sup> <sup>538</sup> <sup>539</sup> <sup>540</sup> <sup>541</sup> <sup>542</sup> <sup>543</sup> <sup>544</sup> <sup>545</sup> <sup>546</sup> <sup>547</sup> <sup>548</sup> <sup>549</sup> <sup>550</sup> <sup>551</sup> <sup>552</sup> <sup>553</sup> <sup>554</sup> <sup>555</sup> <sup>556</sup> <sup>557</sup> <sup>558</sup> <sup>559</sup> <sup>560</sup> <sup>561</sup> <sup>562</sup> <sup>563</sup> <sup>564</sup> <sup>565</sup> <sup>566</sup> <sup>567</sup> <sup>568</sup> <sup>569</sup> <sup>570</sup> <sup>571</sup> <sup>572</sup> <sup>573</sup> <sup>574</sup> <sup>575</sup> <sup>576</sup> <sup>577</sup> <sup>578</sup> <sup>579</sup> <sup>580</sup> <sup>581</sup> <sup>582</sup> <sup>583</sup> <sup>584</sup> <sup>585</sup> <sup>586</sup> <sup>587</sup> <sup>588</sup> <sup>589</sup> <sup>590</sup> <sup>591</sup> <sup>592</sup> <sup>593</sup> <sup>594</sup> <sup>595</sup> <sup>596</sup> <sup>597</sup> <sup>598</sup> <sup>599</sup> <sup>600</sup> <sup>601</sup> <sup>602</sup> <sup>603</sup> <sup>604</sup> <sup>605</sup> <sup>606</sup> <sup>607</sup> <sup>608</sup> <sup>609</sup> <sup>610</sup> <sup>611</sup> <sup>612</sup> <sup>613</sup> <sup>614</sup> <sup>615</sup> <sup>616</sup> <sup>617</sup> <sup>618</sup> <sup>619</sup> <sup>620</sup> <sup>621</sup> <sup>622</sup> <sup>623</sup> <sup>624</sup> <sup>625</sup> <sup>626</sup> <sup>627</sup> <sup>628</sup> <sup>629</sup> <sup>630</sup> <sup>631</sup> <sup>632</sup> <sup>633</sup> <sup>634</sup> <sup>635</sup> <sup>636</sup> <sup>637</sup> <sup>638</sup> <sup>639</sup> <sup>640</sup> <sup>641</sup> <sup>642</sup> <sup>643</sup> <sup>644</sup> <sup>645</sup> <sup>646</sup> <sup>647</sup> <sup>648</sup> <sup>649</sup> <sup>650</sup> <sup>651</sup> <sup>652</sup> <sup>653</sup> <sup>654</sup> <sup>655</sup> <sup>656</sup> <sup>657</sup> <sup>658</sup> <sup>659</sup> <sup>660</sup> <sup>661</sup> <sup>662</sup> <sup>663</sup> <sup>664</sup> <sup>665</sup> <sup>666</sup> <sup>667</sup> <sup>668</sup> <sup>669</sup> <sup>670</sup> <sup>671</sup> <sup>672</sup> <sup>673</sup> <sup>674</sup> <sup>675</sup> <sup>676</sup> <sup>677</sup> <sup>678</sup> <sup>679</sup> <sup>680</sup> <sup>681</sup> <sup>682</sup> <sup>683</sup> <sup>684</sup> <sup>685</sup> <sup>686</sup> <sup>687</sup> <sup>688</sup> <sup>689</sup> <sup>690</sup> <sup>691</sup> <sup>692</sup> <sup>693</sup> <sup>694</sup> <sup>695</sup> <sup>696</sup> <sup>697</sup> <sup>698</sup> <sup>699</sup> <sup>700</sup> <sup>701</sup> <sup>702</sup> <sup>703</sup> <sup>704</sup> <sup>705</sup> <sup>706</sup> <sup>707</sup> <sup>708</sup> <sup>709</sup> <sup>710</sup> <sup>711</sup> <sup>712</sup> <sup>713</sup> <sup>714</sup> <sup>715</sup> <sup>716</sup> <sup>717</sup> <sup>718</sup> <sup>719</sup> <sup>720</sup> <sup>721</sup> <sup>722</sup> <sup>723</sup> <sup>724</sup> <sup>725</sup> <sup>726</sup> <sup>727</sup> <sup>728</sup> <sup>729</sup> <sup>730</sup> <sup>731</sup> <sup>732</sup> <sup>733</sup> <sup>734</sup> <sup>735</sup> <sup>736</sup> <sup>737</sup> <sup>738</sup> <sup>739</sup> <sup>740</sup> <sup>741</sup> <sup>742</sup> <sup>743</sup> <sup>744</sup> <sup>745</sup> <sup>746</sup> <sup>747</sup> <sup>748</sup> <sup>749</sup> <sup>750</sup> <sup>751</sup> <sup>752</sup> <sup>753</sup> <sup>754</sup> <sup>755</sup> <sup>756</sup> <sup>757</sup> <sup>758</sup> <sup>759</sup> <sup>760</sup> <sup>761</sup> <sup>762</sup> <sup>763</sup> <sup>764</sup> <sup>765</sup> <sup>766</sup> <sup>767</sup> <sup>768</sup> <sup>769</sup> <sup>770</sup> <sup>771</sup> <sup>772</sup> <sup>773</sup> <sup>774</sup> <sup>775</sup> <sup>776</sup> <sup>777</sup> <sup>778</sup> <sup>779</sup> <sup>780</sup> <sup>781</sup> <sup>782</sup> <sup>783</sup> <sup>784</sup> <sup>785</sup> <sup>786</sup> <sup>787</sup> <sup>788</sup> <sup>789</sup> <sup>790</sup> <sup>791</sup> <sup>792</sup> <sup>793</sup> <sup>794</sup> <sup>795</sup> <sup>796</sup> <sup>797</sup> <sup>798</sup> <sup>799</sup> <sup>800</sup> <sup>801</sup> <sup>802</sup> <sup>803</sup> <sup>804</sup> <sup>805</sup> <sup>806</sup> <sup>807</sup> <sup>808</sup> <sup>809</sup> <sup>810</sup> <sup>811</sup> <sup>812</sup> <sup>813</sup> <sup>814</sup> <sup>815</sup> <sup>816</sup> <sup>817</sup> <sup>818</sup> <sup>819</sup> <sup>820</sup> <sup>821</sup> <sup>822</sup> <sup>823</sup> <sup>824</sup> <sup>825</sup> <sup>826</sup> <sup>827</sup> <sup>828</sup> <sup>829</sup> <sup>830</sup> <sup>831</sup> <sup>832</sup> <sup>833</sup> <sup>834</sup> <sup>835</sup> <sup>836</sup> <sup>837</sup> <sup>838</sup> <sup>839</sup> <sup>840</sup> <sup>841</sup> <sup>842</sup> <sup>843</sup> <sup>844</sup> <sup>845</sup> <sup>846</sup> <sup>847</sup> <sup>848</sup> <sup>849</sup> <sup>850</sup> <sup>851</sup> <sup>852</sup> <sup>853</sup> <sup>854</sup> <sup>855</sup> <sup>856</sup> <sup>857</sup> <sup>858</sup> <sup>859</sup> <sup>860</sup> <sup>861</sup> <sup>862</sup> <sup>863</sup> <sup>864</sup> <sup>865</sup> <sup>866</sup> <sup>867</sup> <sup>868</sup> <sup>869</sup> <sup>870</sup> <sup>871</sup> <sup>872</sup> <sup>873</sup> <sup>874</sup> <sup>875</sup> <sup>876</sup> <sup>877</sup> <sup>878</sup> <sup>879</sup> <sup>880</sup> <sup>881</sup> <sup>882</sup> <sup>883</sup> <sup>884</sup> <sup>885</sup> <sup>886</sup> <sup>887</sup> <sup>888</sup> <sup>889</sup> <sup>890</sup> <sup>891</sup> <sup>892</sup> <sup>893</sup> <sup>894</sup> <sup>895</sup> <sup>896</sup> <sup>897</sup> <sup>898</sup> <sup>899</sup> <sup>900</sup> <sup>901</sup> <sup>902</sup> <sup>903</sup> <sup>904</sup> <sup>905</sup> <sup>906</sup> <sup>907</sup> <sup>908</sup> <sup>909</sup> <sup>910</sup> <sup>911</sup> <sup>912</sup> <sup>913</sup> <sup>914</sup> <sup>915</sup> <sup>916</sup> <sup>917</sup> <sup>918</sup> <sup>919</sup> <sup>920</sup> <sup>921</sup> <sup>922</sup> <sup>923</sup> <sup>924</sup> <sup>925</sup> <sup>926</sup> <sup>927</sup> <sup>928</sup> <sup>929</sup> <sup>930</sup> <sup>931</sup> <sup>932</sup> <sup>933</sup> <sup>934</sup> <sup>935</sup> <sup>936</sup> <sup>937</sup> <sup>938</sup> <sup>939</sup> <sup>940</sup> <sup>941</sup> <sup>942</sup> <sup>943</sup> <sup>944</sup> <sup>945</sup> <sup>946</sup> <sup>947</sup> <sup>948</sup> <sup>949</sup> <sup>950</sup> <sup>951</sup> <sup>952</sup> <sup>953</sup> <sup>954</sup> <sup>955</sup> <sup>956</sup> <sup>957</sup> <sup>958</sup> <sup>959</sup> <sup>960</sup> <sup>961</sup> <sup>962</sup> <sup>963</sup> <sup>964</sup> <sup>965</sup> <sup>966</sup> <sup>967</sup> <sup>968</sup> <sup>969</sup> <sup>970</sup> <sup>971</sup> <sup>972</sup> <sup>973</sup> <sup>974</sup> <sup>975</sup> <sup>976</sup> <sup>977</sup> <sup>978</sup> <sup>979</sup> <sup>980</sup> <sup>981</sup> <sup>982</sup> <sup>983</sup> <sup>984</sup> <sup>985</sup> <sup>986</sup> <sup>987</sup> <sup>988</sup> <sup>989</sup> <sup>990</sup> <sup>991</sup> <sup>992</sup> <sup>993</sup> <sup>994</sup> <sup>995</sup> <sup>996</sup> <sup>997</sup> <sup>998</sup> <sup>999</sup> <sup>1000</sup> <sup>1001</sup> <sup>1002</sup> <sup>1003</sup> <sup>1004</sup> <sup>1005</sup> <sup>1006</sup> <sup>1007</sup> <sup>1008</sup> <sup>1009</sup> <sup>1010</sup> <sup>1011</sup> <sup>1012</sup> <sup>1013</sup> <sup>1014</sup> <sup>1015</sup> <sup>1016</sup> <sup>1017</sup> <sup>1018</sup> <sup>1019</sup> <sup>1020</sup> <sup>1021</sup> <sup>1022</sup> <sup>1023</sup> <sup>1024</sup> <sup>1025</sup> <sup>1026</sup> <sup>1027</sup> <sup>1028</sup> <sup>1029</sup> <sup>1030</sup> <sup>1031</sup> <sup>1032</sup> <sup>1033</sup> <sup>1034</sup> <sup>1035</sup> <sup>1036</sup> <sup>1037</sup> <sup>1038</sup> <sup>1039</sup> <sup>1040</sup> <sup>1041</sup> <sup>1042</sup> <sup>1043</sup> <sup>1044</sup> <sup>1045</sup> <sup>1046</sup> <sup>1047</sup> <sup>1048</sup> <sup>1049</sup> <sup>1050</sup> <sup>1051</sup> <sup>1052</sup> <sup>1053</sup> <sup>1054</sup> <sup>1055</sup> 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3.

The Charū was a kind of kettle or pot from the Rigvedic period onwards. It had a lid called Abhidhāna and hook by which it could be hung over fire. The authors of the Vedic Index explain that it was made of bronze or iron. We have to think if the people of the Rigvedic period had learnt the art of procuring iron. As Charū was used on sacrificial occasions (we do not know if it were an ordinary vessel used for domestic purposes) I think it was made of clay, because clay vessels were deemed more pure than bronze or iron.

The most famous pottery of the Rigvedic period was Dronakalasa. We all have heard of this vessel. It was a jar meant to store soma juice. It was probably made of wood. The <sup>9</sup> Āpastamba Śrauta Sūtra explains the Dronakalāsa "Dronakrith Kalāso dronakalāśah". It appears that the dronakalāsa had a slanting mouth like 'dona' of our days. If vessel could be made so artistically as to have slanting shape or mouth, I think it was made of clay rather than wood. The wood craft was not so perfect in those days. A <sup>10</sup> Rigvedic hymn refers to a pottery called Titaunā. The Nirukta states that it has many small holes and anything put into it for dressing spread in the whole pottery. Dr. Satya Prakash rightly compares it with sieve as the hymn indicates.

<sup>11</sup>  
Another Rigvedic verse refers to Upasechanī which was a spoon or cup to pour down something. I think both these potteries were made of clay.

The period of the Yajurveda shows an advanced stage of Vedic sacrifices and rituals. Naturally we come across more varieties of potteries in the Yajurveda Samhitā. A few hymns of the Yajurveda give a list of vessels and utensils to be used in the sacrifices. <sup>12</sup> A verse states "सु चश्मे यम-  
शा चश्मे व्यापव्या निचश्मे डोण कलशश्चेत्ता वाणश्च  
मेऽविषवणे चश्मे"  
We find here the names of varieties of pottery such as Sru (cup),



4.

Chamas (spoon), ~~चामस~~ (not clear), Drona Kalasa and Adhisavana (grinding stone). <sup>13</sup> Another verse speaks <sup>14</sup> "चयव वापव्याये ति सतेन देव कल २५५ । ३ मा भ्यामहो २ ५३ स्यात्ति स्मालीरप्रोति" In this verse we find utensils like Sata (basket), Kumbhi (jar); Sthali (a cooking vessel, perhaps Bālahi of our time). At another place in the same veda, <sup>14</sup> we find two new varieties of pottery, they are Chapya and Graha. We have no idea about the shape and size of the aforesaid potteries. Dr. Satya Prakash in his " वैज्ञानिक विकास की भारतीय परम्परा " states that Chamas was used as spoon. Prof. Kieth and Macdonell in the Vedic Index state that Chamasa denotes a drinking vessel usually employed for holding soma at the sacrifice. It is frequently mentioned from the Rigveda onwards. It was made of wood. The <sup>15</sup> Satapatha Brāhmaṇa clearly states that Chamas was made of Audumbara wood. From the <sup>16</sup> Āpastamba Śrauta Sūtra, we learn that Vāyavya was a kind of soma vessel. The Chapya was a kind of dish for eatables and Graha was something like scissor to catch utensils. It is pertinent to think that it was made of wood. Besides these, we find a number of pots in the <sup>17</sup> Yajurveda known as अ० धवनीय, पित्तक. ५ हावीरपात्र etc. Adhavanitha was a kind of vessel in which soma plant was boiled, churned and filtered. Pinvana was a bowl meant for milking purposes. It was made of clay and was like a deep bowl in shape.

<sup>18</sup> The Satapatha Brāhmaṇa gives detailed information regarding the use and technique of manufacturing the Mahāvira-patra. It was made of clay. The clay was mixed with water and it was again mixed with soft soil of ant's hill (अन्तरीहवत्) The S.B. further states that it was placed on a mound (रवर) We think it was turned into a mound and then the pot was made. The upper portion of the pot was elongated given the shape of a nose, three angulas in length. It was one Prōdesa in height.



5.

It was more probably a lipped pot.

<sup>19</sup>  
The Atharvaveda refers to pots made of clay baked or unbaked. Sometimes pots were baked to the extent that they became blue and red (Neel-Lohita). This hymn of the Atharvaveda, I think, gives some hint to the art of firing potteries. The Atharva Vedic people seem to be well acquainted with the art of inverted firing, so that they could produce Neel-Lohit wares, that is, blue-and-red ware or more probably black-and-red ware which tallies with the Atharva Vedic period.

<sup>20</sup>  
The Atharvaveda adds some new names to the list of potteries already discussed. This type of pottery was अमृक् (stirur). Its main function was to remove the cooked grain. The Darbī referred to in the R̥gveda was used as a spoon <sup>21</sup> big and deep enough to distribute cooked food in the Atharvavedic period (वृहदापवन् स्वरान् दर्विः). I think they were made of wood.

When we come to the period of the Śatapatha Brāhmaṇa, we find a more graphic description of potteries. In this period greater degree of sanctity was used to the potteries made of <sup>22</sup> clay, for it is stated that oblation of ghee may be poured <sup>23</sup> with a clay pot. We find new potteries such as Āspatra (drinking <sup>24</sup> vessel), Ritupatra or Pañchāpātra, a few vessel having mouths <sup>26</sup> on both ends, Sukrapātra, Kanishthapātra, Suyisthapātra, <sup>27</sup> upāṇsū, Antayani, Āgrāyanapātra and the like. We have no <sup>28</sup> information about the shape, size and colour of these potteries. Āspatra was a kind of drinking vessel like glass. It is also called Juhū. There was a kind of jar ( ) which had nine or <sup>30</sup> hundred holes (शत विनृणां , नव विनृणां). This type of jar was meant to be used in sacrifices only. It was filled with Parīśruta and hung over Āhavanīya fire. The Parīśruta leaked into the fire drop by drop. This was probably the perforated jar unearthed from the different strata belonging to



The Sūtras, especially, the Kalpa Sūtras and the Śrauta Sūtras mention a large number of potteries all to be used on the occasion of sacrifices or rituals. Most of the pots are referred to the <sup>ut</sup>Samhitās and Brāhmanas. Only a few are new ones and sometimes adjectival terms have been used for them. Like the Samhitās and Brāhmanas, the Sūtras are silent about the shape, size and colour of the potteries. If, sometimes, we come across such description, it is by chance and casual. The Kalpa Sūtras refer to potteries like

The Śrauta Sūtras refer to vessels more than thirty-one. I can simply give the names of new potteries which have not been discussed above. They are

अन्तर्यामिन् 38, अन्वाहारकाल्याली 39, अग्निचतुष्पात्र 37,  
आग्रायणकाल्याली 41, आग्नेयगृह 43, अतिपात्र 43,  
अग्निचतुष्पात्र 44, उक्थकाल्याली 45, उदकमण्डल 46,  
उदकमण्डल 47, उक्थकाल्याली 48, चरुकाल्याली 49, 50,  
दोह्य 51, दोहन 52, प्रचरनी 53, दधगाह्यपात्र 54,  
एह. 55, वज्रिन 56, सवनीपत्र 57



7.

It is for the first time in the Śrauta Sūtras that one finds some indication regarding the painted potteries. Ajagava named above was soma vessel which had paintings of the udder of goats (अजस्तनं चिह्नं इत्याहुः). This vessel had an elongated spout through which soma was poured into the fire (सुव प्रपात्नी येन अवनीयते होममक्षनार्थं सोमः). Though it is not easy, yet we can try to identify this vessel with the spouted wares unearthed from different sites of the country. Ajyagraha was a ladle full of clarified butter. Artapātra was a kind of vessel meant for churing. Dadhigrāhya-pātra was obviously meant for curd. It was made of Audumbar<sup>mba</sup> wood. Dogahra<sup>d</sup> and Dohana were milk-pails.

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- 5.
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55. XII.3.2.







SOME PROBLEMS OF ANCIENT INDIAN POTTERIES

BY

Dr. B. P. Sinha.

Archaeological excavations and explorations in recent years had led to the discovery of numerous ceramic-ware types; some of these are apparently local and some have wide distribution. Different interpretations regarding the authors of these wares, the probable lines of their extension and their relative and absolute chronology have been put forward. It was therefore felt that the time has come when an up-to-date stock of the position be taken and problems relating to the ancient Indian potteries be discussed and tackled by scholars from different angles in a concentrated and cooperative way. This book is first of its kind to focus attention on one of the many source-materials of our ancient material culture. It is rightly held that the Indian culture is synthetic in character and there is unity in diversity. The study of the evolution of ancient Indian pottery, the examination of the different characteristic shapes of ancient pots, and a comparative evaluation of the technique followed in different places even for such ancient period for which literary and monumental evidences are extremely meagre, have also led to the same conclusion that the Indian cultural scene even from the view point of ceramic history is also mosaic in character - different pieces are weaved into a variegated colourful picture.

Coming to some specific problems that have been engaging the attention of the archaeologists and historians. Of late I would only mention a few. India's literary heritage is extremely rich, but unfortunately most of our ancient literature bears no absolute dates about its composition, and



and one has to guess about their dates by reference to their style, stray references to historical events corroborated by non-literary evidences. Epigraphy and numismatics have tried to lay some bricks for bridging the gap, no doubt, but the problem is still challenging. What material culture assemblage should be correlated with specific periods and peoples known from literary traditions. What pottery can be associated with the Vedic Aryans ? What material culture unearthed can be related to the Epic period ? Can we attribute - some pottery types to the Asurs, Dasyus, and Panis of our literature ? Often some historians in despair declare that our literary traditions stored in the Purāṇas and the Epic are mere flights of imagination of our brilliant dreamer poets. While we must concede that conditions in India and Western Asia and Egypt differ but still some of us like Schlimann should start with the blind faith and following the traditions that have so powerfully moulded our life and thought for thousands of years discover <sup>our</sup> ancient Troys - Ayodhyā, Hastinapur<sup>a</sup>, Dwarkā, Indraprastha, and the like. Some work in this direction has already begun but still we are literally in the stage of gathering pebbles on the sea-shore. Only a fringe of the vast and sacred task has been touched.

Since 1921, Harappa culture was regarded as the most ancient culture. But now we have Kalibanga. Kot-Digi and Amri Wares. What is the relation between them ? Is Kalibangā ware the same as Amri ? Probably not. And thus we have in Sindh Rajasthan two distinct cultures superseded by the Harappan. Can a coherent explanation be given to this phenomenon ? Then coming to the Harappan Ware. Its extent as is well known is much widespread now, Western U.P. to the Punjab, and down to Gujrat. Harappan ware has raised many problems. Was it indigenous or foreign ? Has it evolved from Kalibanga. What is its relation



with the painted ceramics in Afghanistan, Baluchistan, Iran and Mesopotamia ? In a paper contributed to the journal of the Bihar Research Society in 1960 I had tried to indicate the similarity between some characteristic painted designs and technique of the Harappan pottery with the Halafian and Arpachiyian or Samarra. It is rather not easy to explain a whole series of identical or very similar potteries observed on vases of different countries as absolutely un-related. Some of the painted designs such as the Fish-scale pattern, interesting-circles, four-petaled rosette and multirayed sun-motif are found almost in identical representations in Harappan and Halafian wares. The use of Reserved-slip, Knobbed ware, particular types of pottery stoppers point to connection between the Harappan and the Uruk and Jemdet Nasr Wares. However there is a large gap between the chronology assigned to Halaf, Samarra, Uruk, Susa-I and Hissar. Harappan in Indian sub-continent. Carbon-14 dates do not go beyond 2600 B.C. for the Harappan. Then often the painted designs of Harappan and Halafian are not met with in the intervening regions.

And then the discovery of Black-and-Red Ware in many sites in North India has raised a series of knotty problems. Black-and-Red Ware is found with the Harappan at Lothal. It is found in both white-painted and plain types in Ahar and Guлинд. It is found in Navada-Toli and Maheshwar. It has been reported from Eran, and from Bengal at Pandurajdhippi. In Bihar both at Chirand and Sonapur it is found at the lowest occupational layer. In Chirand a few white-painted black-and-red ware in few pieces were also found which in technique and quality resembles Ahar types. A white painted black-and-red ware painted sherd has been found at Oriup in East Bihar. It has been found at Atranjit Khara in occupational layer following Ochre-washed ware and is succeeded by the P.G.W. It has been found in Rajghat again at the lowest occupational level.



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Thus it is clear that Black-and-Red ware is a widely distributed ceramic culture. Who were the people who used this ware? They can not be just a localised group. I had suggested in a paper read at the Aligarh Session of the Indian History Congress in 1959 that a branch of the Aryans who came to India across the sea to Gujrat were responsible for this pottery. The fact that the Aryans came in numerous waves is attested to by the Vedic literature. In historical times the Sakas came from two directions - one through the N.W.F. passes and the other across the sea to Sindh, Malwa, and Gujrat. In Bihar archaeologically they formed the earliest settled groups. Can they be identified with the Vratyas who were earlier Aryans who in contact with non-Aryans had given up their religious traditions and even modified their speech, and that is why as fallen brethren they could be taken back after undergoing some purificatory rites. The Vedic and Puranic literature do contain definite allusions to some Aryan tribes siding with non-Aryans against other Aryan tribes. Lothal finds do corroborate co-existence of the two peoples - Harappan and Aryan. But I am aware of the difficulties of this solution. What was the direction of the migration of these early Black-and-Red people? We have numerous C-14 datings for this culture. On the basis of this Agrawal suggests that from Central India this group went to east ward following a narrow strip to Bengal and then turned east and came to Bihar and then eastern U.P. But from Chirand while we have a date in 9th century B.C., we also have 1600 B.C., from a pit-material dug from the lowest Black-and-Red ware strata. Historically also the route of migration has generally been from west to east. But if the Black-and-Red ware people were co-existing at Lothal with the Harappan, which was extensively spread in Rajasthan, why we do not have Black-and-Red ware in Kalibanga and other Harappan sites with the Harappan ware? At Chirand in Bihar we found at the lowest occupational layer crude Black-and-Red ware with copper and



microliths, but in period IB we find iron with Black-and-Red ware. This is significant. Iron is not found at Atranjit Khara with Black-and-Red ware. Iron has been found with PGW at Hastinapur and Atranjit-Khara. From where and when did Iron technology begin in India? We know that iron was first developed in the Iron-region of the Hittite land in Anatolia. The PGW people might have brought the knowledge of iron from outside. But is only thorough examination of iron in PGW layer and the Black-and-Red ware level respectively which might settle the point as to the source of Iron for the PGW people. We know that Bihar and Orissa have iron mines which have a long history of exploitation.

The Ochre-washed pottery is another enigma. It is found in Atranjit-Kheda in layer anterior to the Black-and-Red Ware. But it is found only in small quantity and that also in sparse distribution. It had been suggested that the Ochre washed ware should be associated with the copper-hoard people of the U.P. However more reliable archaeological settling is required to support this thesis. In the Patna Museum we have numerous copper objects found from different hoards. But their archaeological setting is not known. What is the connection, if any, between the copper-hoards of Bihar and U.P. and again a Chemico-Geological comparative analysis of the material may throw light on the source of the copper.

The painted Grey ware has been much talked about pottery. It certainly flourished between 1100-800 B.C. and continued later with N.B.P. Except for some degenerated <sup>form</sup> ~~from~~ in Kausambi and a few sherds in Vaisali, <sup>It</sup> is not found in Eastern U.P. and Bihar or Bengal. It has not been reported from the West Punjab, but I am told that a few sherds were found in Sindh. If it was the Aryan-pottery then it should have been found with the Harappan, if co-existence of the two



peoples is to be accepted, and certainly should have closely followed Harappan, but it is not so. The problem needs ~~xxx~~ more thorough investigation.

The N.B.P. is the prince among potteries in India. Its chronology is 700-200 B.C. In Chirand and Sonapur, it is found in association with the later layers of the Black-and-red ware. It is found <sup>in</sup> abundance in Bihar. In any important historical place and near mounds one can pick up N.B.P. in different hues. From Sonapur and Orissa, we have beautiful pieces. It is obvious then that this region was the home of this ceramic industry. It might have spread from here with Buddhist and Jain missionaries and with the political expansion of Magadha. This pottery was definitely aristocratic and could not have been used by the common people. Who were the people who introduced it? Was it the result of evolution from Grey Ware and black-slipped ware? Or was it introduced by some distinct group of people?

Then we have many wares which have generally local distribution. We have Cemetery H, Jhukar, Jhangar, Malwa-Jorwe to name a few. Their comparative study is a great desideratum.

Another problem is the foreign influence on Indian pottery of foreign intrusion in the Indian scene. What is the relation between the central and North Indian Black-and-Red Ware and the Megalithic ware of South India? How to explain the great gap in time sequence? Then can it be related to the Badarian (Egypt) Black-and-Red Ware or Black-topped Ware? If so, what is the route of the migration into India? How to bridge the chasm in time and space? Some have suggested Iranian intrusion in the Chalcolithic pottery assemblage in Central India. Can this be substantiated from excavations of other Chalcolithic sites in North India? Why Black-on-Red is conspicuous by its absence in the Gangetic Valley, while other



wares of Central India are found here ? Fortunately, we have definite proofs of Roman potteries in the Deccan. Was North India sealed to this influence ? India's contacts with the Western Asia Greek and Rome extend to many millennia B.C. Should we not have some evidence of these in pottery types ? This leads us to an aspect of Indian pottery which has not been given due attention. It is the comparative study of the evolution of distinct pottery-forms and their distribution in India in stratigraphic sequence, and then an attempt to connect these with the evolution or distribution of the distinct forms or shapes of the pots in West Asia. This helps in the solution of the problem of Cultural diffusion.

Pottery is only one of the aspects of material culture, though a very important one. We have to study the associated wares and other material finds related to a distinct ceramic culture to have an integrated picture of cultural development of any region. It may be that an excellence in ceramic industry had its counterpart in other aspects of material culture. But it may be that with the development of metal technology, pottery began to lose its prominence and degenerate. The Classical writers while mentioning rapturously of the golden vessels and palanquins of Chandragupta Maurya, make no mention of even beautiful lustrous N.B.P. which was in a flourishing state at this time. Kautilya refers to potteries and earthen pots casually. Did potter's art lose patronage of the royalty, nobility and the elite in general ? It became the poor men's possession mainly. But could the rich dispense with the pottery ? If in religious rites, copper vessels are still regarded pure (Pavitra), did not the earthen pots in traditional society like the Indian retain their importance, as to-day, in the past. Then why the deterioration ? What was the relationship



with the development in metallurgy and ceramics ? Whether earthen vessels were proto-types of the copper vessels or vice-versa. What are the pottery forms, shapes and sizes which are not found in copper or iron or bronze vessel- assemblage or vice-versa ? Again a history of ceramic technology in India is to be attempted at.

These are some of the problems which have arisen in my mind casually. I have not attempted a scholarly discussion of those issues. I am aware that I am not quite competent to do this. I have pleaded before you the doubts and questions what arise in the mind of curious dabblers in archaeology like <sup>me</sup> ~~I~~, and I have ~~plea~~ <sup>plead</sup> before ~~h~~ you, experts in the field, some of my ideas, which might appear naive to you, with the full hope that this seminar will help in clearing some of these doubts and answer some of the questions. It is obvious that in the seminar lasting for hardly more than 20 hours, all aspects of pottery may not receive due share of attention. There is not, and should not be an attempt at general consensus in scholarly pursuits. Different heads are free to hold different opinions. But I am sure that we will be immensely profitted by the discussions in the seminar.



SPOUTED VESSELS IN INDIA<sup>1</sup>

By

Dr. R.C. Prasad Singh

According to Prof. Childe<sup>1</sup>, "The preparation & storage of cereal food may be *supposed* to have put a premium upon vessels which would at once stand heat & hold liquids. A universal feature of the neolithic communities seem to have been the manufacture of pots. Pottery may indeed have been discovered before the rise of the food producing economy. It might have originated in the accidental burning of a basket plastered with clay to make it water tight. A couple of small fragments allegedly found in the Old Stone Age layer in Kenya suggest this possibility. But it is only in neolithic times that pot making is attested on a large scale, "neolithic site is generally strewn with fragments of broken pottery".

Like other countries making of pottery would have started during the Neolithic age<sup>2</sup> in India. Lower neolithic people of Piklihal, Sangankalla, Brahmgiri & others were quite content of the potteries produced simply. But with the advance of the time elaborate forms of potteries were made. Amongst these elaborate forms we have the spouted vessels.

It may be questioned what led people to introduce spouted vessels in the upper Neolithic age ? The question may be explained by saying that the lower Neolithic people were responsible for the introduction of new economy. Besides a vast tract of arable land producing cereals, they had a large number of wild faunas to supplement their food. So they had not had anything to worry for their food. But the cultivation of cereals in the same plot of land and domestication of animals and their killing subsequently may have led to the shortage of food supply. The shortage of food



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supply caused worry to the upper neolithic people of India. They sought the help of the spirits of their ancestors to whom the nature was so bountiful. The fortune-tellers may have advised their people to offer libation<sup>to</sup> the Divine beings and their ancestors. People out of fear would have agreed to the suggestion of the fortune-tellers & decided to offer libation to the divine beings and their ancestors who being pleased could supply them food in any quantity. Since they were in distress, they had to observe economy in their offerings which may have resulted into the making of spouts and their luting in the vessels out of which libation had to be poured.

It may be questioned whether these spouts are purely of Indian origin or have they come from the west ? Spouted vessels have been reported from Tape Gawra, Susa, Giyan, Hissar, Sialk and other Mesopotamian sites in an earlier context than the Indian sites. They are dated in the Late Uruk age which according to Prof. Childe falls in 3200 B.C. But the Indian sites yielding spouted vessels do not go earlier than the 2000 B.C. Thus we find a gap of nearly one thousand years. Like Mesopotamian Neolithic spouted vessels. Indian vessels are also made of grey ware. Thus it is not only the shape but the Mesopotamian ware as well which were introduced to India. Hence the ground is set for diffusionist to suggest some sort of prehistoric migration from Mesopotamia to India as has been done by Allchin and in course of this migration spouted vessels may have come to India. Their arguments may be strengthened with the occurrence of the spouted vessels at Luristan, Nal, Jhanchmer, Brahmigiri, Nagarjunikonda, Tekkalkota & Piklihal. When we make a comparative study of the vessels found from Mesopotamia and



India we find following differences (1) spouts from <sup>12</sup> Sialk and other sites are beak like (2) Mesopotamian spouts are thicker at the base while they are taper at the top and (3) spouts on the Mesopotamian vessels are luted obliquely in between the neck and the shoulder (4) spouted vessels from Susa, Hissar and others have shorter necks. While spouts from Indian sites save one from Jorwa are cylindrical, they are luted either on or below the shoulder. They occur on long necked jar as well as on flared vessels. Artistically Mesopotamian spouts are neater and have better finish than the Indian spouts which are crude and give pretty dull appearance. Hence when talking about cultural diffusion, one has to be critical like <sup>13</sup> Sankalia. If the diffusion theory is to be accepted, above mentioned differences between the Mesopotamian and Indian vessels make us think that the forces of Indianization had been quite active and hence the vessels had to undergo quite a number of changes.

Spouts are being luted on vessels, basins and bowls. Vessels coming from Brahmagiri, Nagarjunakonda, Piklihal, Tekkalkola, Nevasa, Pimpaldar and others have flared mouth while some of the vessels from Nevasa are long necked. A few vessels from Tekkalkota have blunt carination and sagged base. Spouted vessels coming from Nal have handle attached with the two ends of the mouth of the vessel.

Long necked spouted vessels are peculiar to <sup>14</sup> Nevasa. Wide mouthed vessels from Navasa and Pimpaldar are similar and appear to belong to one cultural group. Spouted vessels from Nagarjunikonda and Brahmagiri have close resemblance, while the spouted vessel with carination and sagger base from <sup>15</sup> Tekkalkota stands isolated. Same is the case with finds from Nal. Thus on the typological basis it can be suggested that



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they represent the different sets of people living in different parts of the Indian sub-continent.

Spouts on these vessels are either cylindrical or concave. Nal specimens are of funnel <sup>16</sup> shaped. All these spouts are hand made and have been luted with the vessel when they were wet. After the spout has been luted, a hole has been punched at the joint in order to pour liquid from the vessels. Spouts from Tekkalkota, Nagarjunikonda and other sites are smaller but when we come down to Nevasa we find that spout are higher <sup>19</sup>. At times they are in the line of the <sup>20</sup> mouth of the vessel.

Spouted vessels from Tekkalkota, Nevasa and Pimpaldar are painted. Tekkalkota specimen retains the traces of pre-firing painting. While paintings on Nevasa and Pimpaldar specimen belong to post-firing stage. They have been executed in black pigment over red background. Paintings include animal designs such as deer, dogs etc. Triangles and similar other geometrical designs are also found.

Other spouted potteries include cups, bowls and basins. Basin with cut spouts have been found from <sup>22</sup> Gilund. Spouted cups known as channel spouted cups have been collected from <sup>23</sup> Navadatoli and <sup>24</sup> Diamabad while bowls with cylindrical spouts have been found from <sup>25</sup> Brahmagiri, <sup>26</sup> Tekkalkota, <sup>27</sup> Mohanjodaro, <sup>28</sup> Nevasa and <sup>29</sup> Diamabad. In cases of channel spouts we find that the spouts are being made by pinching technique but majority of the bowls have spouts being luted to them. Like others, these spouts are made separately and luted into the bowls. They have been luted either obliquely on the shoulders or they luted parallel to the mouth of the bowls. These spouts are generally cylindrical in shape but the specimen collected from Oriyap deserve special attention. It is concave shape and at its top end we find the spout going



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downwards. Obliquely luted spout have been collected from  
<sup>30</sup> Brahmgiri, <sup>31</sup> Nagarjunakonda, <sup>32</sup> Tekalkota, <sup>33</sup> Chandoli and <sup>34</sup> Diamabad  
 while spouts parallel to the mouth of the bowls have been  
<sup>35</sup> found from <sup>36</sup> Piklihal, <sup>37</sup> Tekalkota and <sup>38</sup> Mohanjodaro. Reporting  
 his find from Mohanjodaro Sir John Marshall observed "A vessel  
 very similar in shape is known from Nubia (in) A cairn in the  
 Kurnool district of Madras, Mr. Longhurst found a vessel very  
 like the one under discussion and a gold feeding cup from  
 the grave of Queen Shah-ad at Ur is made on the same line.  
 Further, afield we have another comparison in the shape of a  
 spouted feeding cup from Anau and lastly an almost identical  
 cup to the one found at Mohanjodaro is known from the Italian  
 Bronze Age but is said to be a lamp". Thus a close study of  
 the bowl with spout parallel to the mouth suggest a fairly wide  
 distribution and they may represent a diffusion of culture  
 possibly coming from the Middle East.

At times these bowls are painted. They have been  
 painted in black pigment over red background. The painting  
<sup>39</sup> include geometric patterns such as triangles, squares,  
 lozenges etc. hatched filled or otherwise and oblique,  
 vertical or horizontal lines, non-geometric patterns such as  
 hooks, loops, festoons etc. Animals such as dogs, goats etc.  
 are drawn in a conventional manner.

Making of the spouted vessel does not end with  
 Neolithic-chalcolithic phase in India. They have been found from  
<sup>40</sup> Phase I & II at Sirkap. They have been found in the 6th century  
<sup>41</sup> B.C. context at Rajgir. A rubbish pit belonging to Sunga-  
<sup>42</sup> Kusana age at Chandrakatugarh has yielded several spouted  
 potteries. Potteries ranging between 5th to 8th century A.D.  
<sup>43</sup> at Rajghat contain several specimen of spouted vessels.  
 Spouted vessels sometimes with handles have been found



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associated with the potteries of period V at Hastinapur.<sup>44</sup>  
 Spouted vessel with groovings belonging to Andhra level are<sup>45</sup>  
 reported from Kunnatur. The Satvahana level at Brahmpuri<sup>46</sup>  
 has given several spouted vessels when we reach the Bahmani  
 levels at Brahmpuri and other south Indian sites and Muslim  
 levels in Northern India, spouted vessels become quite common.

<sup>47</sup>  
 When Bruce Foote collected the spouted bowl for  
 the first time at Patpad, he called it milk bowl. Sir John  
<sup>48</sup>Marshall reporting his finds from Mohenjodaro calls them  
<sup>49</sup>feeding cup. According to Allchin metal variety of spouted  
 bowls are very commonly used for serving Sambhar in South  
 India. On the basis of the statements made by these scholars  
 it may be adduced that they were used for serving liquid food  
 to the people. When India was facing hardships during the  
 Neolithic-chalcolithic age, Indians may have introduced  
 them as a household gadget to stop the wastage of liquid  
 food and thus to maintain greater economy which was possibly  
 the need of the time.

<sup>50</sup>With regard to the use of the spouted vessels Mr.  
 Goddard has suggested that these were used to pour libations  
 into the mouth of the dead. Prof. Wheeler has cautioned his<sup>51</sup>  
 pupils in accepting such interpretation. According to Allchin<sup>52</sup>  
 these vessels may have been used as cooking vessels. But cooking  
 into the long necked vessel is an impossibility. Flared mouthed  
 vessels may be used for cooking but it would be extremely  
 difficult to control steam in such vessels which boil the  
 substance kept into it. At the same time none of these vessels  
 with soots or the remains of the cereal food have been found.  
 Hence, his interpretation of the vessel does not appear quite  
 plausible.



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On the other hand a 'Sanskrit text written in Bengali script refers to vardhani-vessel with spout - The vessel is used in the Catus Śastipāda Vāstu Yajña. According to the text Vardhani is tied around the neck of the pitcher used as Kalasa. Another reference from the same text suggests that water should be poured into specially dug ditch in order to check the auspiciousness of the land under construction. Tying of Vardhani around the neck of the pitcher and pouring of water through them suggest religious function.

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The word pranāli standing for spouted vessel occurs in the Śrautā-Śūtra and through these pranālis Soma used to be offered to the gods in the vedic sacrifices. Modern Kamandalu (vessel with a spout used by the Brahmins and ascetics for offering libations to the divine beings, are nothing but the metal imitation of the spouted vessels found from Nal. Hence it become obvious that these vessels were used for ritualistic ends and not for cooking and other purposes.

Thus coming to the close of our study we find that spouted vessels were introduced during the upper neolithic age in India. In case they came from abroad, they had to be Indianized in the Indian sub-continent and after being Indianized they were used for religious ends. While the spouted bowls may have been used as house hold gadget for maintaining economy in the day to day life of the Indian people.

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55. I am thankful to Dr.M.S. Pandey who passed over the  
information to me.



# THE PROBLEM OF BLACK-AND-RED WARES IN INDIAN ARCHAEOLOGY

by

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Archaeological researches during the past two decades have brought to light several proto-historic and early Historical cultures in different parts of this sub-continent. A characteristic feature of most of these newly-discovered cultures is the occurrence of ceramic industries which on account of the technique of what is known as 'invented-firing' have been termed 'black-and-ware'. Till the end of sixties, black-and-red ware had been found mainly from two contexts: one belonging to the proto-historic period from south-eastern Rajasthan with the type-site of Ahar and the other known as the Megalithic pottery found from innumerable iron-age graves and urn-fields of south India. The importance of the first was quickly recognised and its implications were discussed in a symposium<sup>1</sup> held by the Archaeological Survey of India in 1954. Since then, the problem was reviewed by Subbarao<sup>2</sup> in 1958 and again in 1961.<sup>3</sup> At the same time the problem was also discussed by Ramesan.<sup>4</sup> Since then a black-and-red pottery has been found in association with Harappan ware in Gujarat and another ware technically coming under this nomenclature has been discovered in a Chalcolithic assemblage in Eastern India. Besides, a black-and-red ware has been found associated with the earliest habitation in the Gangetic plain and still an early historical black-and-red ware has been reported from dozens of sites in central India, Gujarat, and the Deccan. Hence it has become imperative to study this problem afresh in the light of this new material.

To date, ceramic industries with the designation, 'black-and-red ware' have been reported from the following contexts:



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1. A kind of black-and-red ware associated with the Harappan sites of Gujarat, Saurashtra and Kutch.

2. The Chalcolithic white-painted black-and-red ware of the Banas valley (south-eastern Rajasthan) with the type-site of Ahar (However, recent excavation by Sankalia has proved that this ceramic industry is not associated with micro-liths and the culture represented here may be better termed 'copper-age culture') This ceramics has also been ~~also~~ found although in limited quantity from Central India and extends as far south as Chandoli near Poona.

3. A white painted black-and-red ware found from pre-Painted Grey Ware/ Pre-N.B.P. levels in U.P. and Bihar and associated with the megalithic folk of the Vindhyan range.

4. A white-painted Chalcolithic black-and-red ware recently discovered in eastern India with the type-site of Pandu Razar Dhibi.

5. An early Historical black-and-red ware found at central and western Indian sites.

6. The now-famous Megalithic black-and-red ware of South India.

The Chalcolithic Black-and-Red Wares (Ahar Fabric):

This ceramics was first discovered from Ahar<sup>5</sup>, situated on the river of the same name, a tributary of the Banas. The proto-historic remains at this site are represented by an occupational deposit of more than 20 ft. It has as many as fifteen structural sub-phases and this ceramics has been reported from all the sub-phases<sup>6</sup> indicating a long-life of this ware. The main types include bowls with incurved or straight sides, a shallow dish-on-stand and a ~~gob~~ globular jar with high, narrow neck. The paintings have been executed in creamish-white pigment either on the exterior or on the interior or on both. The painted motifs include groups of dashes, wavy or straight lines, opposite groups of concentric arcs, cross-hatched lozenges etc. It is noteworthy that the rimless CC-0. In Public Domain. UP State Museum, Hazratganj, Lucknow



bowls with straight or convex sides and shallow ~~panant~~ basin have been reported from the earlier two sub-phases. Carinated bowls in this ware which are so common on central Indian sites make their appearance in the third and the last sub-phase at the type-site. Does it mean that the diffusion of this ware from its epi-centre in the Banas Valley started only in the late phase ?

Another important site of this region is <sup>7</sup> Gūlund situated at a distance of 72 kms. N.E. of Ahar. On the basis of the association of this ceramics with microliths at this site, <sup>8</sup> it has been postulated that ~~have~~ this ceramics may have an earlier beginning.

Besides the two excavated sites mentioned above, this ware has been picked up from a dozen sites <sup>9</sup> distinct in Udaipur and several sites in distinct <sup>10</sup> Chittaurgarh <sup>11</sup> Bhilwara <sup>12</sup> Jaipur, <sup>13</sup> Tank and <sup>14</sup> Mandavpur.

This ware has been reported from the Chalcolithic levels of several sites in Central India but on all these sites, its percentage is very less the principal ceramics being the Malwa Ware. Thus it has been found from <sup>15</sup> Eran, <sup>16</sup> Navdatoli, <sup>17</sup> Kayatha, <sup>18</sup> Manoti, and <sup>19</sup> Besnagar. Further south, it seems to have been found from as far south as <sup>20</sup> Nevasa and <sup>21</sup> Chandoli, although in a very limited quantity. Hence it is precisely clear that the ware has been borrowed from south-eastern <sup>22</sup> Pajasthan. The stratigraphic position of this ware on central sites testifies to this assumption. Thus in the horizontal digging on Mound and at Navadatoli, this ware appears in sub-Period-IA while the subsequent two sub-phases yielded white-slipped ware and Jewar wares respectively. Kayatha seems to have an earlier beginning as at this site, the Ahar fabric comes from Period-IB and a wheel-made sturdy ware precedes it at this site the story at Eran and Besnagar is slightly different as this ware has been reported from all the three phases of P.I. at the former site. In typology,



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a channel-spouted vase in this ware - a shape obviously borrowed from the Malwa ware - makes a distinct addition. Besides, the two sites have also yielded early historical black-and-red ware which is associated with the N.B.P., from the succeeding periods. Hence these sites are most suited for finding out relationship, if any, between the Chalcolithic black-and-red ware and the ware of early historical times.

## 2. Black-and-Red Ware in the Gangetic Plains:

The next group of black-and-red ware has been reported from the U.P.—Rajasthan boundary (Noh<sup>23</sup>, Dist. Bharatpur<sup>24</sup>) and on several sites like Atranji-Khera and Alamgirpur<sup>25</sup>. Again, it has been found from several sites in eastern U.P. Notable amongst these are Kausambi<sup>26</sup>, Sravasti<sup>28</sup>, Prahladpur<sup>29</sup>, Masaoon<sup>30</sup>, Sohgaora<sup>31</sup> and several sites in district Basti<sup>32</sup>. Further east, it has been found from Sonpur<sup>33</sup> and Chirand<sup>34</sup> in Bihar. Besides, some sort of black-and-red ware has been reported from the megalithic graves of Kaimur ranges (Kakoria)<sup>35</sup>, Banemilia-Bahera<sup>36</sup>, and Kotia<sup>37</sup> in Varasai, Mirzapur and Allahabad districts respectively. It is noteworthy that on all these sites it has been found in limited number and represents the earliest settled life in the region. As regards the fabric of this ware and the cultural milieu in which it has been found, it is clear that the ceramics of western U.P. is <sup>more</sup> akin to and partakes some features of Ahar fabric. Thus at Noh and Atranji-Khera, the ware has been found in a distinct cultural horizon and is sandwiched between the O.C.P. and P.G.W. respectively. In fact, in order to understand its relationship with these wares, trial digging was done at Khalaua<sup>38</sup> (Dist. Agra; 16 Kms. from Agra on the Agra-Jagner road) when it was found in direct association with P.G.W. The black-and-red ware in Bihar is associated with a Chalcolithic assemblage and has been dated to the beginning of the 1st millennium B.C. The source of this ware still remains enigmatic.



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Black-and-Red Ware in Gujarat, Saurashtra and Kutch

In Gujarat Black-and-red Ware has been reported from two horizons: one in association with the Micaceous red ware which continues with Harappa ware and the Lusturous Red ware and the other of early historical times. Black-and-Red ware of the <sup>former</sup> female class has been recorded from Lothal<sup>39</sup> (when it has been found through out the occupation)<sup>40</sup> Rangpur (periods IIA, B, C) Rojdi<sup>41</sup> (Period IB)<sup>42</sup> and Amra. As the present evidence tends to show, this ceramics makes its appearance along with the advent of Chalcolithic phase in this region and is associated with Micaceous Red Ware. This had led Rao<sup>43</sup> to believe that the ware was used by a local population even before Harappans came to Gujarat. This ware survives the onslaught of the mighty Harappa culture and continues to be in use as late as Rangpur III where it joins hands with the Lusturous Red Ware.<sup>44</sup> Rao believes that the black-and-red ware of Harappan times in Gujarat is quite different from its counterpart in the Banas valley in as much as the paintings in the <sup>former</sup> female are confined only to the intension of the pot while the other has paintings on both the surface. The main types in this ware include convex-sided-bowl (which develops) into an straight - sided one in Ranghpur-IIB), a small jar with a bulbous body and a bowl with stud-handle. The last named type is a diagnostic vessel of this ware. Similar view has also been expressed by Y.D. Sharma.<sup>45</sup> But the painted black-and-red ware obtained from Period-IB at Desalpur (Dist. Kutch)<sup>46</sup> is thought to have its analysis from Ahar-IB. Recent explanations in different parts of the region reveal that this ware has been found in association with Harappan pottery at Surkotada and several other sites in Taluka Rapar<sup>47</sup> (district N. Kutch), and also in the districts of Bhaunagar,<sup>48</sup> Madhya Saurashtra and Surendranagar.<sup>50</sup> However, much spade-work has to precede before arriving on any firm conclusions in this regard. The early Historical black-and-red ware



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will be dealt with further below.

#### 4. Chalcolithic Black-and-Red Ware in Eastern India:

The most recent addition to the repertoire of black-and-red wares is a ceramic industry technically grouped under this label obtained from the newly-discovered Chalcolithic culture <sup>51</sup> at Pandu Rajar Dhibi (Dist. Burdwan) and Mahisdal <sup>52</sup> (Dist. Bishnupur). At the former site, it begins in Period-I in a typical chalcolithic assemblage and continues in the succeeding periods as well. The ware seems to have a wide distribution in the gallery of the Ajai and kunoor <sup>53</sup> as it has been reported from Haraipur-Solphana, Nanur, and several other sites <sup>54</sup>. The typical shapes comprise Channel-spouted bowls, carinated and convex-sided bowls with suggest <sup>55</sup> base. The paintings have been done in white and include dots and oblique strokes etc. The origin of this ware is difficult to ascertain although <sup>56</sup> certain typological resemblance <sup>57</sup> can be pointed with central Indian Chalcolithic pottery.

#### 5. Early Historical Black-and-Red Ware of Central and Western India.

The Chalcolithic black-and-red Ware found <sup>in</sup> the association with Malwa ware and other contemporary ceramic ware in Central India gradually dies out, again to be replaced by a more dominant ware of the same label which makes its beginning ~~xxxx~~ round about 6th - 7th century B.C. It is always associated with iron and continues to hold the scene up to a few centuries of the christian era specially in Gujarat where it is associated with Red Polished Ware. The beginning of this ware can be traced in Nagda-II <sup>56</sup> and Ujjain <sup>57</sup> and at both these sites it occurs in pre-N.B.P. levels. In Period-I <sup>58</sup> at Bilawali (Dist. Dewas), it is associated with the Vesiculated ware, found earlier at Ujjain. Again it occurs at <sup>59</sup> Bahal. On other sites of this region, notably Tripura, Maheswar-Navada-Toli. <sup>60</sup> (Where it comes in Period-IV but continues <sup>61</sup> in P.V. also), it is associated with the N.B.P. ware.



Moving towards Gujarat, it has been reported from<sup>62</sup> Period-I at Nagara (Dist. Kaira), Somnath-III,<sup>63</sup> and Timbarva.<sup>64</sup> It has also been found in association with the Red Polished Ware at Amrali.<sup>65</sup> Further south, it has been recorded from Kolhapur, Nasik,<sup>66</sup> and Nevasa (Period IV and V).<sup>67</sup> At Nasik it is analogous to the Megalithic ware. The typical shapes in central India are <sup>run less</sup> ~~winters~~ bowl and shallow dish but other shapes like lotas<sup>68</sup> and the carinated handis are also met with in the Deccan.

#### 6. The Megalithic Black-and-Red Ware:

This comparatively better-known pottery has been obtained from thousands of megalithic graves and urn-fields <sup>in</sup> the South India during the last one hundred years. It is made on wheel and is typically the product of <sup>invented</sup> firing. The surface is slipped and polished and occasionally decorated with white painted designs. The main types include bowls and dishes, globular vessels, jars, tall lids and ~~xx~~ concave-sided pot-stands. The paintings comprise simple linear patterns, vertical and oblique strokes, wavy lines, diamonds, loops and <sup>l</sup> ~~da~~ <sup>attices</sup>. Post-firing ~~scratching~~ <sup>etching</sup> known as 'graffiti' is a common feature in this ware.

Typological comparison between the pottery after and this ware has been<sup>70</sup> noted by F.J. Richards<sup>70</sup> and the technical similarity between this and the pre-Dynastic and Badarian pottery of Egypt<sup>71</sup> has also been pointed. The <sup>recent</sup> ~~meant~~ explorations<sup>72</sup> in Nubia have also produced identical pots but in the absence of any firm link between these wares, the resemblance is not more than fortuitous.

The black glaze on this ware has been analysed by Plendenlaith<sup>73</sup> who holds that a black colouring clay has been applied even it in the form of an alkaline slip which could ~~not~~ act as a flux at high temperatures. Recently the technique<sup>74</sup> of firing this ware has been studied by Majumdar who holds that in pottery is the result of double firing.



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Chronology:

1. The earliest known Black-and-Red Ware seems to occur in pre-Harappan levels in Gujarat. Charcoal samples from Lothal IIIB, a typical Harappan assemblage, give a date of  $2005 \pm 1158$  B.C. Allowing atleast two ~~xx~~ hundred years for Lothal I and II, it can be argued that the black-and-red ware <sup>in</sup> Gujarat originated <sup>around</sup> about that date i.e. 2200 B.C.
2. This cermaic industry in the ~~Sisak~~ Banas Valley has been now <sup>c</sup>seurely dated to Circa 1800 B.C. as Charcoal samples from the middle levels of Ahar-IA give a date of  $1725 \pm 140$  B.C.
3. Black and red ware in Eastern India has been dated to the middle of the second millennium B.C. In this context, particular mention may be made of a <sup>dates from</sup> ~~series of~~ <sup>from</sup> Chirand and Sonpur in Bihar which ranges between 1600 B.C. to 700 B.C.
4. The <sup>recent</sup> ~~meant~~ dates from Halhur in Dharwar put the beginning of the Megalithic black-and-red ware to the beginning of the 1st millenium B.C.

DIFFUSION:

1. The last question which has been taxing the archaeologists to-day is; Do all these wares have any relationship ~~generical~~ <sup>or</sup> otherwise, amongst them? At the first sight there does not seem to be integral part of one and the same culture. However, closer examination of the evidence by <sup>75</sup>Subbarao, <sup>76</sup>Wheeler, and <sup>77</sup>Soundara Rajan has enabled them to trace a continuity from the one source; namely the Ahar fabric. Now, as pointed out above, the earliest known

Black-and-Red Ware seems to be that obtained in Gujarat and naturally, the ~~exicentive~~ <sup>ev</sup> of this ware should be looked in that region. A detailed report of the ware in these regions has not been published and hence even typological comparison between the Gujarat Black-and-Red ware and that obtained in the ~~B~~ Banas remains to be worked out. <sup>Here</sup> Hence it may be recalled, that dish-on-stand, a typical Harappan shape is also available in the Banas culture. The pottery obtained CC-0. In Public Domain. UP State Museum, Hazratganj. Lucknow



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from the lowest levels of Chirand and Sonpur seems to have generic relationship with that of Rajghat and other sites in eastern U.P. The black-and-red Ware in West Bengal is still an enigma. As pointed out by Wheeler and others early Historical Black-and-Red Ware of Central and Western India has largely been responsible for the Megalithic Black-and-Red Ware. However, it must be admitted that several lacuna remain to be filled even to-day.

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## BLACK-AND-RED WARE IN BIHAR

by

Dr. B. S. Verma.

Black-and-red ware is a kind of pottery, which is black inside and red outside, taking this appearance because of the inverted firing technique applied in baking the pots. Black-and-red ware was known in Indian Archaeological literature as Megalithic ware since it was excavated from hundreds of Megalithic burials of south India and was dated roughly to the 3rd or 4th century B.C. Now, for the last fifteen years, this ware has been coming out from different excavated sites of North-Western, Western, and Central India, and as such it has assumed meaning wider than hitherto ascribed to it. Its association with the Harappan ceramic in Gujrat and post-Harappan chalcolithic assemblages in North-Western and Central India and the Pre-N.B.P. horizon of the Gangetic plains, has posed a serious problem to the archaeologists. Having been discovered from so many sites from different regions of this country, it appears that the ware had a long tradition right from the late Harappan culture (i.e. from 2000 B.C.) up to the post-chalcolithic culture of the north-western and central India and further to the Megalithic culture of the Southern India i.e. 300 B.C. Further, its continuity is found in the historical site at Nagarjunikonda in Andhara, i.e., up to the 3rd century A.D. So we find that this ware had a chequered history of about 2000 years.

Out side the realm of Indian tradition regarding this ceramic industry, it is reported from Ancient Egypt belonging to the 4th millennium B.C. in the Pre-Dynastic Tasian, Badarian and Nagada periods where they have been described as the 'black topped ware'. In the recent excavations near Tumas in Nubia by the Indian team headed by Sri Lal, such potteries have been discovered from the cemeteries of the C-group people and have been dated back to the 2nd millennium



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B.C. This suggests about the existence of an early relationship between Egypt and India. Then, is this relationship responsible for the introduction of black-and-red ware ceramic industry in India ? or is it an indigenous one ? Only an extensive investigation can solve this problem.

The question as to who were the authors of this ceramic industry in India is not yet solved. There are some scholars who believe that the black-and-red ware pottery belongs to the Dravadians. Dr. Subba Rao first propounded this theory<sup>4</sup> and it has been supported by Saundrajan.<sup>5</sup> But recently, Dr. Sinha had advanced another theory and has said that the black-and-red ware was the Aryan pottery.<sup>6</sup> D.P. Agrawal, working on this subject independently has also arrived at the conclusion that black-and-red ware was the pottery of the Aryans who entered India in the first phase.<sup>7</sup>

Now the question arises, as to how this particular ceramic industry was introduced in Bihar. Dr. Sinha is of opinion that the Aryans who entered India by sea-route came to North Bihar by river (Sadānira)<sup>8</sup> and later on reached Magadha. But he is silent about the route which they followed on their journey to Bihar. Sadānira has been identified with the river Candak which flows only in Bihar. Agrawal had tackled this problem in a different way. He is of the view (on the basis of the C-14 dating) that the black-and-red ware ceramic tradition entered Bihar via central India and west Bengal. He has stated that due to dense forest, in Bengal, the Aryans could not move<sup>x</sup> further eastward and as such, from there<sup>x</sup> they re-coiled to Bihar and from here they moved to eastern U.P.<sup>9</sup> He has reached this conclusion on the basis of younger C-14 dates of this region. Dr. Subba Rao had already hinted at the possibility of the movement of black-and-red ware into Magadha along the foot-hill of the Vindhya<sup>10</sup>s. How far the C-14 dating is helpful in arriving at this conclusion is again a matter of controversy. A recent C-14 dating of Chirand has been dated



about seventeen century B.C. (3600  $\pm$ ). Now the theory advanced by Agrawal does not fit in here. If Agrawal would have taken into consideration the pottery types of the sites and C-14 dating side by side, he would have perhaps arrived at a more accurate conclusion. But even the typological study does not help us much. We have no explanation regarding the differences of types in the potteries of Bengal and Bihar. The lustrous painted red ware of Bengal is totally absent in Bihar. Similarly the Channel spout which is found in Bengal has not been discovered in Bihar so far. Even in Bihar itself, we find a vast difference in the pottery types of Chirand and Sonapur. Types like dish-on-stand, footed bowl, spout, jug, lota etc. are absent at Sonpur where as at Chirand they have been found in a good number. So it has created another problem which needs solution. Contrary to this, we find a great resemblance of types and paintings in the potteries of Ahar and Chirand. Moreover, the cultural deposit of the black-and-red ware at Chirand is next only to Ahar. The former has got the deposit of 6 meters whereas the latter has of 11 meters. Even the C-14 datings of both the places have come to closer. Under the circumstances, the theory advanced by Dr. Sinha appears to be more plausible, as the river route is the only solution to the problem, but the route which they followed is to be traced out.

The black-and-red ware was first reported in Bihar in the year 1956 from the excavation at Sonpur, although it was discovered much earlier from the Mahabir Ghat (old Pataliputra) excavation, associated with N.B.P. ware. Since its importance was not much emphasised then, the excavator did not



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did not pay much notice to it; he did not even refer to it in his preliminary review. This fact was detected only when the writing of the report of the site was undertaken by my colleague Sri L.A.Narayan. Later on, Sonpur site was extensively excavated by me, and more black-and-red ware pottery came out in the course of excavations. In the year 1960, the Vaishali excavation also yielded a few black-and-red ware sherds in the pre-N.B.P. strata. In the same year, in course of exploration of the mounds of Chirand and Manjhi in the district of Saran, I collected a fairly good number of black-and-red ware pottery. On examining the sherds, Dr. Sinha was so much impressed that he immediately sought the permission of the Government of India for excavation at Chirand. The excavation started at the site in early 1962 and it continued for three successive seasons. The excavation at Chirand produced far-reaching results, and a new Chalcolithic site was discovered, in Bihar. Not only this, the excavations brought to light many new types of pottery in black-and-red ware as well as in other associated wares, which had hitherto been quite unknown to this region. In 1963, in course of exploration of the mound at Maner in the district of Patna, a few black-red<sup>and-red</sup> ware sherds and a dish-on-stand also in black-and-red ware along with a few microliths were picked up by a band of explorers of the Department of Ancient Indian History and Archaeology, Patna University. A couple of years ago, another team of the Patna University, discovered a Chalcolithic site in the vicinity of Antichak, where a huge stupa of the Pāla period was discovered, in course of exploration. The finds included a few black-and-red ware with paintings and a white painted bowl luted with a lipped spout at the rim portion also in black-and-red ware and a few microlithic pieces. Thus it has been found that this black-and-red ware culture was wide spread in this region. It is not unlikely that if a thorough



exploration is undertaken in this region, some new sites may be discovered. I may like to mention here in this connection that few day back Dr.S.N.Sahay, Curator, Department of Ancient Indian History and Archaeology, Patna University, discovered a few pieces of black-and-red ware sherds from a ditch of Kankarbagh area ~~in~~ in Patna. But the types are more akin to that of Mahabirghat.

From the excavations so far, conducted in Bihar, this black-and-red ware pottery is found from the lower most deposits immediately above the natural soil represented by Yellowish compact clay. Red ware and black or black-slipped ware were the associated potteries of this ware. A few pieces of steel-gray ware have been noticed at Chirand. At all these places black-and-red ware has been found in the Pre-N.B.P. ~~at~~ deposit, its frequency is definitely greater than its associated wares. But in the next-phase, though this ceramic industry continues along with the N.B.P. ware, its frequency became lesser and with the disappearance of the N.B.P. ware, this ware also becomes extinct, as is evident from the excavations at Sonpur and Chirand. At Vaishali, the black-and-red ware disappeared before the emergence of the N.B.P. ware as is reported by the excavator.

The fabric of the early black-and-red ware pottery of this region is on the whole from coarse to medium quality. Fine fabric is rarely met with (Fine variety is found in the next phase i.e. with the N.B.P. ware). The clay contains large proportion of sand, and as such the section mostly are porous and, therefore, they are mostly treated with a little slip, apparently intended to hide the coarse texture. Due to coarse fabric, the potteries of the early strata are found mostly brittle and small in sizes, and as such no complete pots in any of the wares have been found from the excavations.



Long-necked jar, vase, bowl, dish and basin were the principal types which have been found in black-and-red ware. The last one is sometimes found lipped. Bowl is very common in this ware. Majority of them have everted rim and they are of coarse fabric and are treated with a thick slip. Dish appears to have less popular at Sonpur specially in black-and-red ware in the early phase, whereas at Chirand it is more common and has been discovered in many sub-types. Vase in this ware is very few in number. It had horizontally splayed out rim and angular neck, and as such treated with a brown slip. Long-necked jar with broad mouth and concave neck is very common at Chirand whereas at Sonpur, it is totally absent. Similarly dish-on-stand in black-and-red ware was reported from Chirand only, excepting of course at Maner where it was found in course of exploration. Of all the types mentioned above, the frequency of bowl, dish and basin is greater and these types continued along with N.B.P. with minor variation in rim shapes and sizes. Vase and long-necked jar in black-and-red ware disappear abruptly during the N.B.P. phase, though the former continued in red ware. Dish-on-stand also disappear with the emergence of N.B.P. ware. Shallow and trough dishes of Chirand also disappear side by side.

Black or black-slipped ware forms the next higher percentage in this period. It is invariably of coarse fabric and porous section. The ware is as a rule treated with a black slip on both the sides. The range of types confined in this ware were bowl and dish only and their rim forms were mostly everted and out going. Though dish whose rim is slightly inverted is totally absent at Sonpur, Vaishali as compared to Chirand where it was found in fairly good number. Of coarse fabric, it is treated with a slip. Dish-on-stand is also found in this ware. Of the types, the frequency of bowl and dish is greater and at the same time, they continued along with the N.B.P. ware.



The associated red ware industry was not much favoured during this period. Its frequency as compared with black and-red, black or black slipped ware is lesser every where. The principal types which were discovered from the excavations were vase, basin, bowls and a trough dish. Their shapes are similar to those of black-and-red ware types. Besides, a few more miscellaneous types, such as spout, jug, long-necked jars, footed-bowl, dish-on-stand and including those with corrugated stem, lipped basin and three legged perforated pot were the important types discovered at Chirand only. A few pieces of hand-made shallow lids like dish are only reported from Sonpur. It is of coarse fabric and thick section.

In addition to the above noted types in the associated wares of the black-and-red wares, a few more types in cream-slipped red and steel-gray wares deserve our attention. They are a miniature sarcophagus in cream-slipped ware and a bowl (painted), lota in steel-grey ware. The former, though partially damaged, is painted in dots in cream pigment depicting a bull resembling that of a cave painting and a deer whose horns are slightly visible. All these types have come from Chirand only. From the very look of a lota (steel-grey) and that of a jug (in red ware) they appear to be of foreign origin. How the types reached Bihar is a matter of further investigation. With the discovery of a miniature sarcophagus in this region, the date of the megalithic may be shifted back to much earlier i.e. about 1000 B.C., and its origin may be traced some where in eastern India. But unfortunately, it is the solitary example so far discovered here.

A fairly good number of painted black-and-red ware potteries were discovered at Chirand and Oriup. It is a cream pigment and some times in white pigment painted on the red and black surface of the ware. Cream is generally applied on the red surface where as the white on the black surface. The



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paintings included groups of dishes, wavy lines, straight lines and solid dots of different sizes. Dots are generally found on the neck portion of the vases (mostly of the black-and-red ware) and sometimes on the base border of dish-on-stand (red ware). Invariably dots are very common on red ware, the associated ware of the black-and-red ware. Wavy lines and stroke are more popular on the black surface of the dishes. Paintings on the associated black-slipped ware mostly comprise dishes and strokes. It is reported from Chirand as well as from Sonpur. A solitary example of a bowl in steel-gray ware has stroke paintings on its rim. At Sonpur and Vaishali, not a single sherd of black-and-red ware was found painted.

Decoration in applique on the associated potteries of this ware is very frequent. Both at Chirand and Sonpur, we find this types of decoration represented by rope, thumb-pressed, oblique strokes and criss-cross designs. They are mostly found on the shoulder-portion of vase and basin.

From Sonpur a few black-and-red ware sherds were discovered with graffiti marks, but it is not from the earliest strata. Graffiti-marked potteries from Sonpur are generally found from Period-II i.e., from the N.B.P. level. At Chirand also not a single sherd with graffiti marks was discovered from the earliest level.

The associated antiquities of the black-and-red ware culture in Bihar were bone or antler arrow-heads, stylus and pins. Most of them have been discovered in manufacturing stages. Of the stone objects, beads of semi-precious stones were very common. A few pieces of microlithic cores and tools were discovered in course of excavation. Meagre use of copper has been attested to at both the places Chirand and Sonpur, whereas from Oriup a copper bangle has been reported from this period. Terracotta beads, mostly pear and Ghata shaped have been reported from Chirand and Sonpur. Of the figurines,



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a headless flattish bird with punctured decoration over its body from Chirand and an archaic female figurine from Oriup are interesting.

Iron slags were discovered just on the top level of the black-and-red ware deposit from Sonpur, whereas from Chirand a fairly good number of socketed hoe (about 5 or 6 in number) were discovered from the top three layers of the black-and-red ware deposit. Animal and fish bone pieces were discovered in large number.

Of greater interest were a few post-cremation pit-burials discovered at Sonpur in the second phase of this culture.

As regards their structural activities, we have not noticed any kind of ramnants either of mud or brick structure. Of course, we came across with lime floors belonging to the early phase at Sonpur. Some circular floors covered with a thin layer of ash were also noticed here in course of excavations. Perhaps they used to live in circular huts which in course of time were destroyed, presumably by fire. Similarly at Chirand also, circular floors were noticed. As deduced from the discovery of a solitary thick piece of chunk of reddish (probably due to fire) clay having one surface plain and the other impressions of reeds and split bamboos, it is inferred that the people of Chirand during this phase of culture used to build their houses of perishable materials like reeds and split bamboos and got them plastered with mud. Associated with this ware, about three occupational levels were identified. Post-holes were also noticed on the floors which further suggest that they used to live in huts.

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PRE-HARAPPAN PAINTED POTTERY CULTURE - A STUDY  
IN SOCIO-ECOLOGICAL FACTORS

Vibha Tripathi (Smt.)

(This paper has been prepared under general  
guidance of my teacher Dr. K. K. Sinha )

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During the last few years, field-work in Baluchistan, Sind and Rajasthan has brought to light groups of pre-Harappan Cultures. A predominant characteristic of all these is the presence of painted pottery of diverse shapes and designs. No two groups - howsoever near in time and space - show common traditions in the art of pottery making. The present paper seeks to relate this phenomenon of variety with socio-ecological factors. In the end, a brief reference has been made to the exclusiveness characterizing the present day tribal societies. But first a brief resume of the available archaeological data about the pre-Harappan Cultures is given. Piggot's competent summary (1950) will need substantial modification in certain areas, as a result of recent work. George F. Dales has tentatively suggested grouping of the pre-Harappan Cultures under five chronological phases. Dales' A and B relating to Stone-Age Culture in the region are out of the scope of the present paper.

Mundigak I KGM II, III (of Fairservis) Rana Ghundai and Sur Jungal I, Togau I, II all come under his phase C. Pottery industry improves during his phase. Metal and potter's wheel were introduced which were known to Mundigak (Afghanistan) people and Quetta valley people although at Rana Ghundai hand-made wares are found.

Phase D is said to be represented in the upper levels of the above sites as well as at Nal (cemetery), Amri and Kot Diji. Most important thing about the pottery of



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this is the introduction multicoloured pottery technique.

In Quetta valley at Kechi Beg new type of ceramic emerges. A gray ware variety, Faiz Mohammad painted ware and 'Quetta wet ware' and 'Quetta circle stamped' wares are included.

Next phase E is again subdivided in two. Early sub-part comprises of Mundigak III-IV Damb Sadaat II the characteristic ware of which is known as "Quetta" ware and Rana Ghundai III a, b, intermediate phase of Amri, habitation level at Nal, 'Kot-Dijian' level and 'antecedent' culture at Kalibangan. The late phase is seen at Damb Sadaat III with its ware called "Sadaat ware", surface finds at Togau and overlapped sequence of pre-Harappan and Harappan at Kalibangan. This phase is succeeded by Harappan culture, in plains of Sind.

All these cultures, for the sake of convenience, bear the vague label 'pre-Harappan'. But unlike the term 'Harappan' which implies a single homogenous culture, these are all sprawling and sparsely populated social groups. A study of pottery, collected either in explorations or in regular excavations is a revelation of distinctive and independent societies with regard to time and space "and an inherent complex criterion in that, it is subject to definite variation in technique form and style of decoration". Let us consider these 'cultures' in detail.

If we proceed from West, from Afghanistan side we are encountered with an important site known as Mundigak (Casal) which is an important habitation of pre-Harappan settlers. But here we would not study Mundigak in detail.

Near Khojak Pass joining Afghanistan and Baluchistan is Quetta, an important pre-historic habitation. The earliest habitation in Quetta Valley is known from the lowest levels



of Kile Ghul Mohammad. Overlying the stone age habitation here are periods II and III. Dales who feels that since pottery types of period II are not with in period III and vice-versa each one of this should not be given a separate entity and categorizes them under his Phase C. Pottery in the beginning is characterised by simple and hardly decorated ware which tends to refinement and develops into special kind of surface called 'basket marked ware'. Iranian influence can be traced on potter's industry, specially that of Chashm-i-ali (near Tehran).

Kile Ghul Mohammad IV is best represented at Kechi Beg (13 miles from KGM) and is also to be seen at Damb Sadaat (Mian Ghundai-Stien). Pottery is called 'Kechi Beg variety' consisting primarily of a gray ware with fine thin body with beautiful decoration. Pottery of "Kechi Beg" variety is primarily a polychrome ware. Kechi Beg white-on-dark slip, is an important variant suggested by Fairervis. Colour scheme here included the use of red, black and white; black on light to medium brown surface; red on red. Typical Kechi Beg pottery is marked by a beautiful thin walled deep vase with rows of painted designs in black and red and sometimes including white also. A bi-chrome ware (black-and-red) is also reported by Dales from Kechi Beg 'Quetta wet ware' and 'Quetta circle stamped ware' are also found here in Kechi Beg assemblage.

Another group of Quetta area can be seen at Damb Sadaat II generally designated as 'Quetta ware' and is distinguished by its bold designs in strong, thick strokes of brush, geometric designs with black on buff are favoured. Another type of ware, usually gray in colour, decorated with black or red-brown designs is also seen. Here no use of second colour is made, a feature new to Baluchistan region;



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colour varies from pinkish to greenish tinge (due to firing).

'Sadaat Ware' of DS III is the latest of the pre-Harappan Quetta Group, is characterised by its naturalistic floral 'Bueranium like' designs. The ware here bespeaks the sophistication attained by people.

In Northern Baluchistan in the valley of Zhob habitation flourished at Rana Ghundai and similar material is also seen at Sur Jungal. Earliest settlers used a hand-made, crude and undecorated pottery.

New people inhabited the site (RG II) whose was a wheel turned, beautifully adorned pottery. The repertoire was marked by stylized bull and black huck motifs the ware popularly known as 'Bull ware'. Colour ranges from pink or buff to a dark red colour adorned with black designs. Shapes are remarkably beautiful. Maker of this ware appear to be much advanced people.

RG III was reinhabited by another people who lived for a longer duration (3 building levels). Few traits of previous period are continued but Amri like Geometric motifs with red and black are abundant. Tall beautiful 'carafe like' vessels are encountered. Towards the end the style worsens.

Another group of Zhob is represented at Periano Ghundai and Moghal Ghundai with geometric designs although few leafy patterns are also seen.

Kalat region has three important sites -- Togau, Siah and Anjira (de Cardi). Importance of this ware lies in its peculiar pottery repertoire consisting of friezes. It is categorized into four stages. Stage A consists of single row of animals generally caprids and birds facing left. In one case dancing human figures (heads missing) are



also represented. Stage A mainly consists of surface finds. Stage B comprises of a type of animals whose bodies are suppressed depicting head, horn and neck. In stage C single horn is represented in a shape of fringe. Final stage D is marked by a typical representation which can hardly be identified or even visible and according to de Cardi coincides with the beginning of painted black on black technique (Anjira III).

At Surab sites Togau ware is seen from Siah and Anjira II onwards.

Finds from Pirak mound (in 56 and then in 1963 Raikes) near Sibi (W. Pakistan) presents an enigma. The Bichrome Ware found here is a class by itself hence designated as 'Pirak Bichrome Ware'. It is a coarse, heavy ware with rough surface -- plain as well as painted. Plain one is either pale reddish, buff or pinkish and is hand-made whereas painted ones are thrown on slow wheel bearing a cream or whitish slip sometimes finished by wet smoothing; burnished examples are also met with. Repertoire here consists of geometric motifs mostly favoured are the diagonal motifs -- lattices, chequers, cheveron, etc., most of these are all intricate and complicated designs. In spite of the rough surface the designs and colour schemes are very sophisticated, circles or blobs, etc. rarely appear.

Importance of the ware lies in its contacts and dating. No site of Baluch hills bears any resemblance with Pirak damb although vague comparisons have been made with Amri lowest levels, Samarra I and Nineveh III. Further complications are raised because of its early date (5000 B.C.) ascribed by Raikes.

In S. Baluchistan is located the site of Nal with beautiful Polychrome style. Lower level is formed by the



cemetery which was earlier (Piggott, Gordon, etc.) ascribed to a phase later than habitation area. Fine thin walls varying in colour from buff to pinkish and an off white surface with a greenish tinge, few gray and dark brown are also seen. The designs which are geometric are very delicately painted with thin brush. Remarkable is the arrangement of lines -- parallels, steps or stepped cheverons, cross diamonds, circles, sigmas, etc. among the natural motifs are fish and goat or sheep, etc. This cemetery is said to have some connection with Mundigak III, Anjira III and Nindovari, etc. whereas habitation levels can be compared to Mundigak IV, Anjira IV, Togau stage D.

Kulli is another south Baluchistan site with its remarkable landscape patterns in stylistic hybrid type. Animals represented are humped bulls, cows, lions (though rare), goats, black buck and fish and birds. Bulging eyes, elongated bodies partially hatched and generally alternated by plants and trees are typical of Kulli. This is generally compared to 'scarlet ware' of Susa. It was partially contemporary with Harappa.

In the valley of Indus are two important cultures of Pre-Harappans -- Amri and Kot Diji.

Amri (Casal 1959-62) reveals three periods. Lowest is Amrian with fine cream coloured pottery also to be seen at Kechi Beg and generally called 'Amri-Kechi Beg bichrome ware'. In conjunction with it are found a bright red ware and Togau C type wares.

Intermediate phase here, is compared with occupational levels of Nal, Mundigak IV and designs of Kulli and Mahi, Susa D and Abu Dhabi (Umm-on-Nar) A brown or red slipped ware of Kot Diji type which was present earlier but its number increases gradually. This is succeeded by a mature



Harappan phase.

At Kot Diji (Khan) in Khairpur Dist. two levels Harappan and Kot Dijian are excavated. Upper level (sub-phases 1-3) is Harappan. From layer 3 a to 3c Harappan material mixed with Kot Dijian is revealed. Layers 3-16 are pre-Harappan, not at all influenced by Harappans. An evolution can be traced from lowest levels to upper ones. Pottery of earlier layers have simple bands varying in thickness from half to 3 ins. but slowly it developed into wavy lines, loops, roundels and simple triangle further into intersecting circles and linked roundels, etc. making appearance in Indus Valley mature phase. No Zoomorphic figure excepting a horned deity is represented.

In Rajasthan at Kali Bangan a pre-Harappan settlement with two mounds is excavated. Here the pottery ranges from coarse unslipped ware with a red slip confined up to shoulders to an over all slipped ware in red and plum red or purple red with black paintings. Geometric, zoomorphic and floral patterns are represented on pots. The pottery of pre-Harappan level is characterized by six distinct fabrics labelled by Thaper, fabrics A to F. Fabric A is a coarse ware with irregular striation marks with colour ranging from red to pinkish with black and also white (though rare). Type B. is characterized by deliberately roughened surface with horizontal, wavy or tortoise shell impressions. Fabric C has a smooth surface and an all over slip of red and plum red or purple red. The surface resembles that of 'Quetta wet ware'. Fabric D has a sturdy look and incised decoration on red surface. Fabric E is a buff slipped ware and F, grey slipped both are rare. The difference in fabrics C to F are "more apparent than real." Here pre-Harappan phase is succeeded by a Harappan



phase.

Pottery's art thus is a manifestation of the pre-Harappan societies which evolved from an embryonic stage of village culture to a complex village life. Conjectures might be made regarding their economic and social patterns since several other materials besides pottery are also available like architectural remains, beads, terracottas, seals, figurines (revealing their faith) but pottery constitutes the major evidence. They developed from huts to uniformly oriented mudhouses, from stone and bone tools to copper and bronze implements, from coarse and crude hand-made wares to highly sophisticate ceramic industry. Theirs was an agricultural economy and people of Baluch and Sind region were not blessed with a favorable climate and soil. Even today population of the region is semi-nomadic. Theirs was a self sufficing society. Their location was such that they could not move out much, climate of those bleak and desolate deserts deterred them from the social contacts from villages to villages. Trade and commerce were very limited rather nil since movements were restricted and avoided. People on Porali in Edith shahr, complex hardly knew their neighbours on Dasht and Hab. The culture thus remained unmixed and unseasoned with any outside favour. These were small villages whose people were leading a isolated life and remained reserved thus maintained their individuality and independence. Pottery painting of no two places bears resemblance although all of them were familiar with the same animals and plants but the black buck at Rana Ghundai does manifest a different style from that of Kulli. The Kulli bull does not resemble any and forms a class by itself. If we try to relate two places who depicted triangles on the



pot it would look rather strained or superfluous, since "each panel is like a complete word consisting of individual items which serve as letters. A whole design is like a sentence expected to convey a complete idea." (S.P. Gupta).

They shut themselves in their own natural barriers and remained mere pockets of cultures than serving as constituents of a single "Pre-Harappan culture". They all originated, flourished and ended themselves in their own barriers seemingly unaware of what was happening elsewhere. The area of distribution of these cultures is very small compared to Harappans but still their contacts are very limited. In one place (Nal) we see beautifully embellished

and delicate paintings with a thin brush. Animals are painted in most naturalistic fashion. On the other hand we can look back to Quetta characterized by bold strokes of brush, or most stylized animals at Kulli. In spite of the fact that some of them were contemporaries but they distinguished themselves from their neighbouring folks in every respect.

This naturally gives rise to certain queries. Why in spite of a shorter span of space were their contacts limited and variety larger? What factors are responsible for the isolation and indifference of these people?

Geography and ecological factors come first to the mind as a probable cause of the isolation and the corresponding independent efflorescence in the painted pottery cultures.

The location of Baluchistan on the map shows that it is an extension of the Iranian plateau which has hardly any high mountain range and suffers from lack of perennial water sources, small rivulets are there, soil again lacks natural



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minerals, most of the region is desert, climate is arid and dry. Furthermore, Baluchistan is marked off from Indus plains by Kirthar and Sulaiman Ranges irrigated by River Zhob Beji, Pishin Losa, Hab, Porali and Dasht, etc. The capping of Kirthar hills forms Kalat plateau on which are territories of Kharan, Jhalwan and Makran which are archaeologically very rich. The basin of R. Zhob (N. Baluchistan) and Quetta area are shelters of many pre-historic cultures.

Let us consider the ecological factors one by one which affect the cultural life and also account for the variety and richness in painted motifs on pottery.

"Climate is often the measuring stick of human society" Extremity is characteristic of weather of this region -- extreme heat and freezing cold. Annual rainfall in Baluch-Sind is hardly 10", all falls in 10-20 ins. cantour. To protect themselves against sun, sand and seasons of extreme cold they took refuge in homes and hardly ventured to go out. Since they had no occupation other than food production, they developed an aesthetic sense and painted beautifully in natural way unaffected by other people.

Soil is another important factor to affect the ways and means, habits, nature etc. of a particular class of people. Mostly Baluch soil is barren and unproductive it is only on the banks of rivers that cultivation is possible and cultures are seen to have sprouted up there. This all round aridity of land might have led to a preference for geometric motifs in general. Kolwa is economic back-bone of Baluchistan today and in this region on Khar Dasht is located the famous prehistoric site of Kulli. This is very well depicted on their works of art. The landscape panels depicting grazing



bulls, healthy cows under or near trees, floating fishes, and birds are fascinating. Animals are hardly represented without trees and plants. Although geometric motifs are not absent but a marked preference for landscapes indicates the different ecological situation of Kulli people.

Rivers as we know were a great unifying factor since they facilitated transport and eased communication, commerce and trade. No big river system irrigates Baluchistan as a result of which small villages were inhabited on the banks of these small rivers on rivulets and their contacts were confined to that particular clustre of habitation on that particular river.

If we contrast these peasant communities with the subsequent civilizations which flourished in plains of Indus the point would become still more pronounced. The culture which flourished in the valley of Indus is designated as a civilization with its important centres at Harappa and Mohenjo-daro which are also said to be two kingdoms which governed the whole culture. The importance of this civilization lies in the fact that inspite of the wide extent which is said to be extensive in 8400,00 miles they retained their uniformity and a standard pattem of life. This standardization is seen in every aspect of life -- religious, political, economic and social, Their's was a highly evolved social pattern, economically divided into two classes ruling or rich class and artisans or labour class. Arts and crafts were blossoming in full in those prosperous days. The uniformity of patterns, forms and fabrics leads to a tentative hypothesis that there were guilds or some organisation of potters' families or also of other crafts. These brought about the standardization and an appreciable



degree of uniformity in design motifs etc., notwithstanding local variations. Same intersecting circles, conchshell shaped designs, combed patterns, wavy lines, etc. are seen all over Harappan phases. Natural motifs are more favoured by these Harappans peacocks and fish motifs were very common. Human representations are a rarity and so are the caprids.

The scholars accuse Harappan culture of monotony. But the beautiful work of art (dancing female figure of bronze, ascetic, beautiful seals, etc.) tell us that they were not devoid of artistic sense. But more important is that Harappans were utilitarians of the first order whose painted pottery could not match the rich variety as those of peasant communities. They produced things on large scale and focussed their attention on usefulness, beauty came as a by product. The standardization and set pattern of life goes with all round development of society.

The same cycle of variety and local variation is repeated in chalcolithic cultures of central and western India and also latter in early historic cultures. Society again became diffused, several groups of cultures came into existence. The chalcolithic cultural group of Malwa with its peculiar self slip and paintings executed in thin purplish to brown black pigment is easily distinguishable from Jorwe-Nevasa ware which on the other hand has a characteristic red pottery painted in black although it is also seen on other sites of Godavari, Pravara basin but a wider extent of each group is an indicative of cultural advancements made by the cultures as time advances. Ahar ware again represents a distinct style and so does Maheshwar and Navadatoli.



If we look towards the living primitive societies hidden from the glitter of modern culture we might find a glimpse of the past prehistoric cultures in living form. Although there is some impact of time on them but, fundamentally they have remained unchanged. There are a large number of these people in distant hills or forests still residing, e.g. Santals (Bihar), Oraons, Mundas, Has, Kharias (Chota Nagpur), Bhuiyas, and Soars (Orissa), Kadars (Tamil), Nagas and Khasis (Assam), Bhils and Kalhakarais, Dhangar and Todas of Nilgiris. These are all conservatives and no contacts social or economic are made with each other. Analogous to pre-Harappan societies they too lead a solitary and isolated life; abhor travel, practise their cultures strictly.

In the end we may conclude by saying that compulsion of environmental situation coupled with lack of urge for inter-group contacts throw up a large number of independent cultural groups in pre-Harappan Baluch, Sind and Rajasthan. It is represented by their individual painted pottery tradition. The situation appears to be reversed with the coming up of Harappans. With a complex developed society standardization becomes the keynote : local variation become few and refinement in painted motifs is definitely in a lower key than in some of the pre-Harappan groups. This cycle appears to be repeated in subsequent periods as well.







ORIGIN AND SPREAD OF THE  
NORTHERN BLACK POLISHED WARE.

by  
Dr. Sachidanand Sahay, Curator.

Archeological explorations and excavations conducted at different sites in India have yielded various types of potteries which help us very much in establishing the cultural sequence in respect of ancient time. Of these, the 'Northern Black Polished Ware' is a most remarkable class of pottery, because of its distinctive lustrous polish. It, therefore, marks a new era in the field of ceramic industry.

The 'Northern Black Polished Ware', in accordance with its name, is essentially the pottery of Northern India, though it has also been found from such places which do not come under the geographical limits of the northern half of the country. Some scholars have, therefore, suggested that the very name of this pottery is a misnomer, but this suggestion does not appear to be convincing, because everywhere there is uniformity in the shape and technique of its manufacture which is indicative of some common origin of this pottery. In all probability, as said earlier, it is the pottery of Northern India, on account of its larger frequency, varied shades and finer fabrics in this region, and other sites yielding this pottery may mark a peripheral distribution. The suffix 'northern' may, therefore, not be discarded altogether. Further, the word 'black' shows that it was manufactured in black colour only, but the excavations at Kauśāmbī and Rājghat in Uttara Pradesh and Sonapur, Chirand and Oriup in Bihar have yielded this pottery in various shades and colour which include golden, silvery, pinkish, gold-blue, brown-black, steel-blue etc. Although the black colour is found in larger frequency where other shades are available, yet it will not be fair to ignore them totally while naming this pottery. So far the polish or glaze is concerned, almost all of them, irrespective of their shades, bear similar polish or glaze. The present name was given on the basis of its first appearance at Taxila in black shade, bearing shining polish; but now when it has been found from various places and in various shades, it requires a fresh nomenclature. It may be called 'Northern Glazed Ware' or 'Northern Polished Ware' but it is difficult to change



the name since it has become very much popular in India and abroad.

This pottery is made of a well levigated and fine clay which is generally grey but sometimes reddish in section. The core, however, varies in colour. It was fired to a very high temperature in a 'Sagger Kiln' as suggested by Rowson.<sup>1</sup> The grey and red surfaces and the metallic sound it produces are due to this process of firing. Thus, pots on the top are fired red in the oxidising atmosphere and those below turn grey. The clay used for this class of pottery appears to have been taken from the silt of the Gangetic basin. On the basis of average thickness, this ware can be divided into three grades - thick, medium and thin. The pottery also shows the painting tradition of the grey ware. Bahal in Khandesh and Kausambi and Sravasti in Uttar Pradesh, painted N.B.P. ware has been found which bear paintings in yellowish and light vermilion colours in the steely-blue or golden surface.<sup>2</sup> The pottery is, therefore, unique in its character and may be highly praised as the "DE-LUXE" ware of the time. A comparison with its associated wares fully justifies its higher place in the society. It was obviously not a common man's pottery; it was used by aristocrats or members of rich families. The pottery must have been very costly as some rivetted potteries have been found from the excavations at Ripar, Bairat, Sonapur and Kumrahar.<sup>3</sup> They are repaired by copper wire or pin-rivetting. This clearly indicated that the cost of a new pot was very high. Further, it appears that the ware had inadequate supply due to limited pottings or the high cost of production which involved expensive investments.<sup>4</sup> Its availability in lower frequency than its associated wares further strengthens the theory that it was a costly pottery,

The exact technique of its manufacture and polish have been discussed by Khan Bahadur Sana Ullah, Archaeological chemist to the Archaeological Survey of India.<sup>5</sup> The chemical reports also show that it was fired to a very high temperature under reducing condition, and the frequent peeling of the slip in this ware suggest, that it was fired more than once but this point needs further classification.<sup>6</sup> It appears from these chemical reports that the black colour and the polish thereon were achieved because of the chemical reaction but so far no chemical analysis has been made on



other shades of this pottery. It is just possible that some other chemicals may have been added to it for producing other shades but it requires further experiment and chemical analysis.

Of all the problems connected with this pottery, the place of its origin is the most crucial one since it has been found from various parts of this country. Although much has been said and discussed by various scholars on this point, yet there is a scope to say something more.

In the majority of the excavated sites, this pottery has been found in abundance with the Punchmarked coins and unscripted ~~cast~~ coins. If there would have been a definite date of these coins, it could well have been dated along with them, but as a matter of fact there are various theories in respect of their date. According to these theories, the date of the Punchmarked coins ranges between 500 B.C. and 200 B.C., but now it has been placed generally between the 5th-6th cen. B.C. and the 2nd cen. B.C. Thus, on this basis, the date of the N.B.P. ware may be placed between the 5th-6th cen. B.C. and the 2nd cen. B.C.

The stratification of the excavation and C-14 determination also go a long way in fixing the date of the N-B.P. ware, but in some cases it has been noticed that the C-14 determination differs with the archaeological stratification. In this connection, it may be mentioned that the C-14 determination is a more scientific method of dating an object than the date provided by the archaeological stratification, but very few sites have so far been dated in accordance with the C-14 method.

On the basis of stratification, the Taxila evidence shows that it has been found in association with the Alexander's coin in mint condition at a depth of 6 ft below the surface level and also at a depth of 10 ft.

This may go to show <sup>that</sup> the N.B.P. ware at Taxila is pre-Alexandrian.

Alexander's coins have now been dated between 330 B.C. and 300 B.C.

Thus, the date of the N.B.P. ware, according to this evidence, will go back to either 500 B.C. or 600 B.C. At Rupar, which is also in Northern



India, the N.B.P. ware has been found from period III. C 14 date of the  
 early level of period III is  $480 \pm 100$  B.C., while the date of the post  
 Painted Grey ware level of this period is  $390 \pm 100$  B.C.<sup>9</sup> It is clear  
 from this that the N.B.P. ware of Rupar may be dated between the 5th cen.  
 B.C. and the 3rd cen. B.C. The N.B.P. ware of Ujjain and Māhesvara in  
 Madhya Pradesh has been dated around the 5th cen. B.C.<sup>10</sup> The C14 date  
 of the N.B.P. ware at Besnagar also shows that it belongs to the 5th  
 cen. B.C. ( $470 \pm 100$  B.C.)<sup>11</sup> At Tamilak, Bangarh, Chandraketugarh (all  
 in the W. Bengal) and Sisupalgarh (Orissa) in the east and Amravati in  
 the south, it may be placed between the 5th cen. B.C. and the 3rd cen.  
 B.C. Thus, it appears that in northern, central and southern India inclu-  
 ding W. Bengal, it appeared around the 5th cen. B.C. and continued till  
 the 3rd cen. B.C. The excavations at Atranjikheda shows that it has  
 been found from period IV. The C14 date of the early level of this  
 period is  $530 \pm 85$  B.C.,<sup>13</sup> that of the middle phase is  $295 \pm 100$  B.C.<sup>14</sup>  
 and the lowest level of this period has been placed in  $265 \pm 165$  B.C.,<sup>15</sup>  
 which may suggest that the N.B.P. ware people came here in the early  
 6th cen. B.C. and continued till the 2nd cen. B.C. At Hasinapur,  
 though it has been found in association with the Punchmarked coins from  
 period III,<sup>16</sup> yet a few sherds occur below the level of the Punchmarked  
 coins. Since the Punchmarked coins generally range between the 5th-6th  
 cen. B.C. and the 2nd cen. B.C., it may be dated between the early 6th  
 cen. B.C. and the early 2nd cen. B.C. The excavations at Ahichchhatra,  
 however, shows that it has been found from the transitional phase of  
 the Painted Grey ware as a result of which some Painted Grey ware sherds  
 are associated with the N.B.P. ware. The C14 date of the early phase  
 is  $475 \pm 105$  B.C. while that of the late phase is  $160 \pm 95$  B.C.<sup>17</sup> Thus  
 the N.B.P. ware of this site may be dated between the 6th cen. B.C.  
 and the 2nd cen. B.C. At Kausambi,<sup>18</sup> it has been dated around 625 B.C.  
 on the basis of stratification, but two dates of period III yielding the  
 N.B.P. ware, have been determined on C 14 method; the one is  $440 \pm 100$   
 B.C.<sup>19</sup> and the other is  $500 \pm 100$  B.C.<sup>20</sup> Thus, the N.B.P. ware at



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Kausambi may be assigned a date between the 6th cen. B.C. and the 5th cen. B.C. So far no C14 date has been fixed for the N.B.P. ware phase at Sravasti, though on the basis of stratification it has been placed in the 7th cen. B.C., but at <sup>21</sup> Rājghāt, the C14 date of period IB, yielding the N.B.P. ware, is  $440 \pm 110$  B.C., which may go to show that it belongs to either the 6th cen. B.C. or the 5th cen. B.C. It may, therefore, be suggested that the N.B.P. ware in Uttar Pradesh ranges between the 6th cen. B.C. and the 2nd cen. B.C., but when we come to Bihar, we find that it has been assigned to an early date, both on the basis of stratification and C14. At Chirand and Sonapur it has been found from period II which follows period IB. The period IB at Chirand has been dated around 800 B.C. on the basis of stratification, but C14 date is  $765 \pm 100$  B.C. Thus the N.B.P. ware at Chirand may be placed in the 7th-8th B.C. since the stratification does not show any break in the occupation. At Sonapur also, period IB has been dated between 850 B.C. and 650 B.C., on the basis of stratification, but C14 determination has placed it in  $635 \pm 110$  B.C. which shows that it belongs to the 6th-7th cen. B.C. At <sup>27</sup> Rājgīr it has been dated around 2nd-3rd cen. B.C. while at <sup>28</sup> Kumrahār it belongs to the 1st-2nd cen. B.C. on the basis of C14. The date at <sup>29</sup> Rājgīr is  $30 \pm 105$  B.C. and <sup>30</sup>  $265 \pm 105$  B.C. and that of <sup>31</sup> Kumrahār is  $115 \pm 100$  B.C.

Thus it may be inferred on the basis of the above dates of the different sites yielding the N.B.P. ware that it was introduced in Bihar near about the 7th cen. B.C., became popular around the 5th-6th cen. B.C. when it spread rapidly into different parts of the country and continued till the 1st-2nd cen. B.C. The revised date of the N.B.P. ware may, therefore, be fixed between the 7th cen. B.C. and the 2nd cen. B.C., and not between the early 6th cen. B.C. and the early 2nd cen. B.C. as previously suggested by the Archaeologists. In view of an early date of the N.B.P. ware at Sonapur and Chirand, it may be suggested that Bihar was the place of its origin.



The frequency, fabric and shade of this ware may also give some clue in determining the place of its origin. At Sarnāth, Kausāmbi, Rājghat and Srāvastī it has been found in large quantity, in various shades and in fine fabric, but its frequency is comparatively smaller than that of Bihar. Moreover, there are certain shades from Sonapur, Chirand and Oriup which have not been found from any other place. At Taxila, Rupar, Atranjikheda, Hastinapur, Tamruk, Sisupalgarh and Amravati, it has been found in small quantity, and that also in one or two shades only. It is interesting to note in this connection that those places where it has been found in small quantity, it occurs in black shade. The frequency of the black shade is greater even at those places where it occurs in large quantity which is indicative of the popularity of this shade and its greater demand in the society. Bihar has yielded this pottery in all the three grades ( thick, medium and thin ), but the finer fabric is in large frequency. It may, therefore, be suggested on this ground as well that Bihar was the place of its origin. Further, some N.B.P. ware sherds from Sonapur show patination which indicate that it was in the experimental stage while some other sherds from the same site bear gold spots on the black polished surface which probably reveal that the experiments were going on to produce this pottery in different shades and colour. This further strengthens the theory of its origin in Bihar. Beside this, there is another sherd from the same site which is in black and red ware and has got the same polish on its surface that is noticed on the N.B.P. ware. This probably shows that the experiments may have been made on the Black and Red ware as well.

The N.B.P. ware has either succeeded the Black and Red ware or the Painted Greyware. At Atranjikheda, however, all the above three types of potteries have been found. The Black and Red ware comes from the earliest level, and the Painted Grey ware is followed by the N.B.P. ware. At Hastinapur and Kausāmbi, it has been found above the Painted Grey ware level. Therefore, the scholars suggested that the N.B.P. ware



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followed the tradition of the Painted Grey ware, both in technique and type. It is interesting to note in this connection that the Painted Grey ware is almost absent in Bihar where it has been found above the level of the Black and Red ware. On this basis it may be suggested that in Bihar, it followed the tradition of the Black and Red ware. Looking on this hypothesis, there should be two groups on the N.B.P. ware people - one who followed the tradition of the Painted Grey ware people and the other who followed <sup>that of</sup> the Black and Red ware people. But this hypothesis may not be correct in view of the fact that there is uniformity in the technique and type almost at all the places where it has been found suggesting some common origin. In this connection it may be noticed that a third type of pottery is noticed in association with the Black and Red ware as well as with the Painted Grey ware. This type of pottery is known to the Archaeologists as the Black-slipped ware and closely resembles with the N.B.P. ware in technique and type. Hence, in all probability, it has followed the tradition of the Black-slipped ware. The chemical reports also suggest that the black glaze is achieved because of a certain chemical property applied over the black surface of the pottery. It is quite likely, therefore, that experiments may have been made on the Black slipped pottery to achieve glaze or lusture on it. It may also be added that there is a great similarity between the types and forms of the pottery in the Black and Red ware and the N.B.P. ware. The bowls and dishes are some of the common types noticed both in the Black and Red and the N.B.P. wares at Sonapur and Chirand in Bihar. The difference lies mainly in forms, sides and sizes. The potteries of period IB have the representation of mostly everted rims having concave sides, while those of period II yielding the N.B.P. ware have inverted rims. The similarity in the pottery types may suggest that the N.B.P. ware has followed the tradition of the Black and Red ware and the types (in the N.B.P. ware) like tumblers, lids and slightly corrugated stands are indicative of its origin in this region.



It will not be out of place to mention here that when the N.B.P. ware reached a developed stage by the 5th-6th cen. B.C. Magadh had become one of the centres of artistic, religious and political activities. It was during the 5th cen. B.C. that Buddha went to Bodh Gaya for meditation and got enlightenment. He, then went to Rājgrih, Vaiśālī and Sarnāth. At Sarnāth he delivered the first sermon. Immediately, monks may have been deputed to different parts of the country for the propagation of his religion, and they may have carried the N.B.P. ware pots with them. As already mentioned above, Sāñchī, Ujjain, Śrāvastī and Taxila have yielded the N.B.P. ware. These places, by now, had become important centres of political, religious and commercial activities, and as such they were frequently visited by the kings, princess and the king's party. It is just possible that they may have carried away some of the pots with them, since we know that the N.B.P. ware was generally used by the rich families. The study of artistic activities may also be helpful in determining the place of its origin. The art of polishing probably originated in Magadh first on the N.B.P. ware and developed on stone during the Maurya period but some scholars have suggested that pottery has been imported from the west. Their arguments are based on the analogy between the black-glazed ware of the Hellenistic Greece and the black-gloss ware of Arretine. The black-glazed pottery of Greece has been dated around the 3rd-4th cen. B.C. while the black-gloss ware of Arretine has been dated between 30 B.C. and 30 A.D. Thus both these types of ware are later in date than the N.B.P. ware because it has been assigned between the 6th cen. B.C. and the 2nd cen. B.C. Hence the technique of polishing does not appear to be of foreign origin. Now, since it is of Indian origin, it may have been experimented first on the pottery, and then it would have been applied on stone as is evident from the Aśoka pillars bearing similar shining polish. Scholars had doubt that the polish on these pillars is of foreign origin, but Sri N.R. Ray



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has almost proved that it is indigenous in character - may be a court  
 34 art. It may be possible, therefore, <sup>that</sup> it derived the technique of polish-  
 ing from the N.B.P. ware which originated in Bihar. Thus these evidences  
 also support the theory of its origin in Bihar.

There is another important point in respect of its origin in Bihar  
 and that is the presence of iron in association with the Black and Red  
 ware in period IB and the N.B.P. ware in period II at Sonapur and  
 Chirand. In period IB, the iron occurs though in small quantity in the  
 form of socketed hoe and iron lugs, yet it is of a great significance.  
 This may indicate that they had probably adopted the iron in their use.  
 In period II, the iron appears in large quantity in various forms and  
 shapes like sword, javeline or spear lances, daggers, blades, arrow-  
 heads etc. which may go to show that the use of iron increased. It  
 appears, therefore, not unlikely that the iron was invented in Bihar by  
 the Black-and-Red ware people in about 8th cen. B.C. The use of iron  
 increased around 6th cen. B.C., when the N.B.P. ware developed and spread.  
 It may, therefore, be inferred that since both of them were iron using  
 people, they may have come from the same family, and as such the persons  
 belonging to period IB of Sonapur and Chirand in Bihar may be responsible  
 for the evolution of the N.B.P. ware. This further supports the theory  
 of its origin in Bihar.

The N.B.P. ware is spread over various parts of this country from  
 Taxila in the north-west, to Bangarh and Tamluk in the east and Amravati  
 in the south. This ware, as a matter of fact mainly occurs from the Gan-  
 getic valley with its focus in Ancient Magadh, but it has also been  
 found in large quantity from Ujjain in Madhya Pradesh. Therefore, some  
 35 scholars have suggested that Ujjain was a separate centre of production  
 of this ware on the ground that it was a flourishing commercial capital  
 city in the 6th cen. B.C. They have further supported their above pre-  
 position in the light of the find of a large number of fragments of



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rather poor specimens including those without slip in the interior. These sherds, according to him, have unusual core. It is partly grey and partly brown in one and reddish in another. Therefore, he thinks that these may have been imitations of the real N.B.P. ware. It may be inferred on this basis that Maheśvara was a separate centre of production, but now the question arises whether it is contemporary to the N.B.P. ware of Bihar or it is of a later date. It is most likely that in the early stage a separate centre may have been established to meet the greater demand. Similar suggestion may also be made in respect of Ujjain and Kausāmbī. The Buddhist monks, traders, princess and kings may be responsible for the spread of this ware. Since, it is found mostly from the Buddhist sites it is most likely that the spread has been made mainly by the Buddhist monks.

Thus, with our knowledge of the age and distribution of the N.B.P. ware belonging to the early centuries preceding the Christian era, we can clearly see its movement in space and time towards north, east, west, and south from focus in the Gangetic valley particularly Bihar in Magadh. It, therefore, originated in Bihar, became popular in Uttar Pradesh, then spread in other parts of the country where it has been found. Thus, Bihar may be regarded as the epi-centre of the N.B.P. ware.

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THE NORTHERN BLACK POLISHED WARE IN BIHAR

By

Dr. Sita Ram Roy.

As early as 1961 the author wrote a paper, entitled 'The N.B.P. Ware is the first representative Aryan pottery in Bihar', which was read in the Srinagar session of the All India Oriental Conference, '61, and in it he tried to prove that the Aryans, after their appearance on the land of Bihar, produced the Northern Black Polished Ware<sup>1</sup>. He still holds the same view and puts forward his arguments for the consideration of the scholars in the field.

By the time the Aryans touched the land of Bihar, their cultural development and mental achievement were far superior to those of their predecessors. Naturally their knowledge in the field of ceramic art was enriched by their constantly increasing skill inherited from their forebears. The Northern Black Polished Ware, the best example of the indigenous ceramic art of India, seems to have originated somewhere in the region covered by present Bihar and eastern Uttar Pradesh soon after that region was Aryanised.

Our discoveries in the field of archaeology have supplied enough material to bear testimony to the fact that the Aryans were highly skilled in the field of ceramic art long before they brought forth the Northern Black Polished Ware. The discovery of the Painted Grey Ware<sup>2</sup> from the pre-N.B.P. Ware strata in the upper Gangetic basin clearly testifies<sup>to</sup> the high skill of the Aryans in the art of pottery-making in the very early stage of their settlement on the Indian soil. This, further, suggests that the people of this race, who, even in the remote past, were able to produce such a technically brilliant pottery like the Painted Grey Ware which ranks among a very few best ceramic industries in India, must have sufficiently qualified themselves in the ceramic field long before they touched Brahmā-varta. .



The movement of the Aryans from the upper Gangetic basin to the region of Bihar must have taken a few centuries. During this span of time the authors of the black slipped ware, found in association with the Painted Grey Ware at Hastinapura and suspected to be the forerunner of the Northern Black Polished Ware, must have developed their skill to such a stage as was able to give birth to the pottery like the Northern Black Polished Ware.

The archaeological field researches, no doubt, show a wide distribution of the N.B.P. Ware, i.e. from Taxila in the north-west to Tāmluk in the north-east and to Amrāvati in the south, but the farther we move from Bihar to any direction the greater we find deterioration in fabric, lustre, varieties and frequency of the ware. From several sites of Bihar, especially from Vaisālī<sup>3</sup> (Distt. Muzaffarpur), Sonpur<sup>4</sup> (Distt. Gaya), Rājgīr<sup>5</sup> and Pāṭaliputra<sup>6</sup> (Distt. Patna) and Chirand<sup>7</sup> (Distt. Saran), the Ware, under review, has been found in number and varieties representing glaze in different colours, viz., silvery, golden, jet black, metallic steel blue-occasionally with reddish brown patches. Its slip, rather its glaze, seems to have reached its zenith in this region alone. A fragmentary specimen<sup>8</sup> of a knobbed lid of the ware in copper or chocolate colour, lying with the Vaisālī Museum, is so brilliantly glazed that it deludes one to mistake it for a brilliantly polished stone piece, and the sherd itself gives the impression of the stone ware. Such an example has not been seen elsewhere.

The typical Painted Grey Ware, which has been identified as the Mahābhārata pottery by B.B. Lal on the basis<sup>9</sup> of its find-spots, the names of which are referred to in the great epic in question, seems to have been the Aryan



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representative pottery of the upper Gangetic basin, and it belonged to a period long before the appearance of the Northern Black Polished Ware on that region and hardly to the Mahābhārata time. The Mahābhārata mentions about the military expeditions of the Pāṇḍavas which were sent to all quarters of our country. Bhīma marched with flying colours on Kōśala, Ayodhyā, Uttara Kōśala, Kāśī etc. Kṛishṇa, Bhīma and Arjuna came to Rājagṛīha in connection with the assassination of Jarāsandha. All this suggests that the people of eastern India had social intercourse with those of Hastinapura and others and they played very important parts in the Mahābhārata war. But it is surprising that no site in eastern Uttar Pradesh and Bihar could yield the ware. Probably it did not last for long, otherwise in the long run it could have travelled far and wide like the N.B.P. Ware or it was under circulation when there was no social or commercial intercourse between the north-western and eastern regions of the country. The thick<sup>10</sup> deposit of the Painted Grey Ware at Hastinapura supports the latter inference.

The Painted Grey Ware, discovered in association with the N.B.P. Ware from Vaiśālī<sup>11</sup>, seems to be different in lustre and fabric from that found at Hastinapura, Ahichchhatra etc. The Painted Grey Ware of Vaiśālī has got the same lustre as that of the Northern Black Polished Ware, although the painted design on the sherd has got a close affinity to one of the designs noticed on the typical Painted Grey Ware found at Pāṇipat<sup>12</sup>. This may suggest that the makers of the Northern Black Polished Ware probably had, by accident, come across<sup>Wick</sup> the sherds of the Painted Grey Ware in the latter's region and had tried the design on their best ceramic specimen, viz.,



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the N.B.P. Ware. Even such examples are rare.

The Rāmāyana mentions that Rishi Viśvāmitra along with Rāma and Lakshmana, in course of his journey from his hermitage (Near Buxar) to the land of Mithilā, halted near the city of Girivraja or Vasumatī and narrated to his pupils<sup>13</sup> the glories of the city and the greatness of its founder.

Does this not suggest that the region was Āryanised long before the Rāma's visit to the place? Girivraja has also been<sup>14</sup> mentioned as the capital of Magadha in the Mahābhārata.

Vasumatī or Girivraja has been identified with present Rajgir in the district of Patna. The study of the cultural deposit at Rajgir gives a clear picture of the human occupational sequence of the site. The excavation at the site by A. Ghosh revealed that the real occupants of the place were the Northern Black<sup>15</sup> Polished Ware using people who were certainly none but Aryans. The earlier phase of the deposit, characterised by the N.B.P. Ware, revealed a few post-cremation burials which also, if the Śatapatha Brāhmaṇa is relied upon, seem to be Āryan in character.

We are informed by traditions that Vaiśālī was founded by some legendary king named Viśāla who ruled the region sometime before ten generations from king Sumati who was contemporaneous with Rāma. One may infer from this that the region was Āryanised long before the advent of Rāma. The archaeological excavations of the site have proved that the real human occupation of Vaiśālī started with the people associated with the Northern Black Polished Ware. The occurrence of the coarse black-and-red ware from the pre-N.B.P. Ware level from (the Chakrandas area of) Vaiśālī and Chirand in north Bihar and from Sonpur in south Bihar may be associated with the non-Āryan culture of the region. The discovery of the



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Polished black-and-red ware sherds from the region in association with the Northern Black Polished Ware clearly suggests that the polish on the former was due to the social intercourse between the makers of the black-and-red ware and those of the N.B.P. Ware. Can one not conclude that the region was Āryanised by the users of the Northern Black Polished Ware?

In the symposium of the meeting of the Central Advisory Board of Archaeology at Baroda in 1960, S.C. Ray was right in putting forward the fact that the Northern Black Polished Ware was in circulation in Magadha during the time of the Mahābhārata, although his further argument was not convincing when he advocated that the Painted Grey Ware and the N.B.P. Ware were coeval. Had this been the case, both the wares would have been picked up from the same strata in any site where both the wares have been found from different layers. The appearance of the N.B.P. Ware at the upper strata in the regions of the Painted Grey Ware simply suggests that the former was later in date than the latter at least in the latter's region. The fact that the motherland of the N.B.P. Ware was ignorant of the culture of the typical Painted Grey Ware at any stage may allow many a mind to infer that the Painted Grey Ware disappeared even from its motherland (i.e., upper Gangetic basin) long before the appearance of the Northern Black Polished Ware.

The cultural deposit below the Northern Black Polished Ware in Bihar, wherever examined, has yielded such a pottery as is fragile, crude and coarse. At places the occurrence of the pottery from the pre-N.B.P. Ware level is nominal. The excavation at Rajgir (1950) yielded only a few sherds from the strata below the Northern Black Polished Ware.



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The ware was dull red in colour, crude in making and coarse in fabric. The excavator could not be able to affiliate it to any known ceramic industry as the sherds were too fragmentary. The ceramic finds below the N.B.P. level at Sonpur, Chirand and Vaiśālī were coarse in character in comparison with the N.B.P. Ware. This suggests that the makers of the pottery of those days were unrefined and ignorant of the advanced art which the authors of the N.B.P. Ware applied on their ware. The polish, rather the glaze, on the ware may have reached its brilliancy long after it came into existence.

If we suppose that the N.B.P. Ware appeared long after the Āryans settled on the land of Bihar, it brings a lot of difficulties. Had they produced the Northern Black Polished Ware long after they had settled on the land of Bihar, they would have certainly brought forth some such ware as would have been highly developed in technique as was expected from the successors of the makers of the Painted Grey Ware found at Hastināpura and Ahichchhatra etc. whence the Āryans had migrated towards the east. It is quite unnatural to think that the successors of the makers of so fine a pottery like the Painted Grey Ware would deteriorate in the field in such a way that they would produce such a dull, crude and coarse ware as is discovered from the pre-N.B.P. level at Rajgir.

The fact that the real human occupation of the sites of Vaiśālī, Rajgir etc. begins with the Northern Black Polished Ware using people suggests that there began the firm settlement of a cultured human race like the Āryans and not that like the vagabond non-Āryans. Had the Aryan settlement in the region begun with some other ceramic industry than the N.B.P. Ware, the ware produced would, naturally, have occurred



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in abundance in a stratigraphic sequence and tallied, to some extent, either with the succeeding ware (N.B.P. Ware) or with the preceding one (the P.G. Ware) in type, fabric and brilliancy. Like its polish, the refinement in the shape of the black-and-red ware (fine dishes and bowls) was a later development as a result of its association with the Northern Black Polished Ware for the refined specimens of the former have invariably been found in association with those of the latter.

All this suggests that the beginning date of the N.B.P. Ware will go further back at least in its motherland. This may be decided by the radio carbon 14 dating.

The N.B.P. Ware in Bihar has been reported from Balirajagarh or Baligarh (Darbhanga district), Bodh-Gaya and Bhelawar-garh (Gaya), Buxar (Shahabad), Chérand (Saran), Dharhara (Purnea), Girīk (Patna), Monghyr (Monghyr), Nāthnagar (Bhagalpur), Pāṭaliputra (Patna), Pirnagar Deorhi (Monghyr), Rajgir (Patna), Sonpur or Sonitpur (Gaya) and Vaiśālī and Kāṭra (Muzaffarpur).

The types of the ware bear testimony to the utilitarian character of the pottery. The known shapes are dishes, bowls, handis, jars, lid, tumbler, vessels with stand bases and spout (suggestive of the spouted vessels), of which all except spout have been found in Bihar.

The N.B.P. sherds, repaired by copper-wire or pin revettings, have been reported from different sites in India, viz., Rupar (Distt. Rupar Punjab), Bairat (Distt. Jaipur), Ujjain (Distt. Ujjain) and Kumrahar (Distt. Patna). This shows that the broken N.B.P. Ware was not usually thrown away; it was used after it was repaired by copper-wire and at



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the same time the repair cost less than the actual production of the ware would have cost. In this practice Bihar also did not lag behind, but it is difficult to say wherefrom this system began.

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## DISH-ON-STAND

By

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Reader.

The dish-on-stand including simple dishes belonging to the Harappa and post-Harappa chalcolithic cultures may be regarded as the prototypes of Indian dishes or thalis. Thus the antiquity of the typical Indian dish (whether footed or non-footed) goes back to the third millennium B.C. It is interesting that this particular type of ware retained its shape during the long period of its survival.

The Indian dish is a shallow vessel with raised sides, upright or flaring. It is a multi-purpose vessel, mainly used for consuming food, either dry or liquid. The bowl also serves this purpose and any sizable shallow bowl may be called a dish. It makes its appearance before the dish and both types of pottery shapes appear to have been derived from the same source.

The distinctive thali appears in the Gangetic Valley (e.g., Ahichchhatra and Hastinapur) in c. 800 B.C., and in spite of complete change in fabric and material, the shapes continue till c. 500 B.C. (e.g., Kausāmbī and Vārānasi<sup>1</sup>). The shapes of this vessel in the Painted Grey Ware and the N.B.P. ware are the same. The dish is mentioned also in the literary sources belonging to this period and later, which ~~a~~ many suggest that at this stage it was not exclusively used as a vessel for consuming food. Thali is derived from Sanskrit Sthālī<sup>2</sup> which is referred to by Pāṇini<sup>3</sup> and Patanjali as an earthen pot used for cooking. These authorities do not refer to the footed dish as it had disappeared by the period when they flourished. It appears



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that the dish or sthāli in the beginning was used both for cooking and eating. Later it ceased to serve the purpose of cooking. The term Karpāra is mentioned in Kātyāyana's Varttika on Pāṇini as a vessel for eating and it has been<sup>4</sup> interpreted as a bowl. It is the Sanskrit Karpāra which in course of time seems to have assumed a number of variants such as Kuravā, Kulhara, Katōrā etc.

The dish-on-stand makes its first appearance in the<sup>5</sup> pre-Harappa phase at Kālībangan. Its use becomes widespread in the Harappa period and later it continues in the different wares of the post-Harappa chalcolithic cultures spotted from Baluchistan, Sind and Gujarat to Bengal. This distinctive pottery type has been found in several sites such as Harappa, Mohenjodaro, Chanhudaro, Lothal, Rangpur, Thukkar, Ahar, Kalibangan, Nevdatoli, Rojdi, Mehgaon, Chirand, etc. Only stems have been found at Kauśāmbī and Pandurajadhibi. This typical dish-on-stand almost dis-<sup>6</sup>appeared by c.1000 B.C. However, a low stand is seen in the beginning of the Christian era in the dish of the imported Avretine ware.

The tradition of attaching stand bases to dishes and bowls is very ancient in India, and abroad. This feature is seen in Egypt, Elam, Crete, Anau, early European<sup>7</sup> sites, etc. In Palestine, the stand appears in the 4th<sup>8</sup> millennium B.C. in Egypt it continues in the First Dynastic<sup>9</sup> period, and in Greek pottery, the appearance of the dish with high stems belongs to the seventh century B.C.<sup>10</sup> In India, the stand base first appears as a support for deep<sup>11</sup> bowls belonging to the Neolithic phase. This stand is apparently short. It is this tradition which has continued



till present times in the form of rounded or ring-base of convex sided bowls.

It is easy to understand the reason of providing stand or pedestal for a bowl which had rounded base; but it is difficult to explain the purpose of the stand of a dish. The dish-on-stand or the footed thali has been identified with the fruit stand used in Western Asia and Europe. In countries where fruits are available in abundance (e.g., Iran), this may have been the proper use of the footed dish even in early times, but the same does not seem applicable in Indian context. There is evidence to show that even in the west the footed dish was not exclusively used as a fruit stand. The Indian footed dish might have been utilised for keeping cooked food, preferably fried or roasted or any other eatable. This type of vessel possibly served the purpose of an offering dish. The higher sections of the society might have preferred to use such type of vessels on special occasions. It may be argued that dishes with long stems may not have been suitable for eating purpose because unless one holds it properly, such a vessel may be overturned. But such dishes are provided with considerably broad bases to maintain the balance. So far no such vessel has been subjected to chemical analysis of the remanent food particles, it is difficult to come to a conclusion. But one thing appears to be obvious that even as a vessel of secular use it was possibly used on special occasions. If it was used for consuming food, it must have served the purpose on certain ceremonial occasions or for entertaining guests.

There is one more possibility of the secular use of the dish-on-stand. The Harappans were a community of



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traders and they might have used various sizes of stands in their shops for displaying the articles of sale.

Though there are many possibilities as regards the use of the dish-on-stand, but its main use seems to be ritualistic, when the typical dish-on-stand disappeared from the Indian scene, its place as a vessel for ritualistic purpose was possibly taken by the lamp-on-stand. Marshall has rightly established on the analogy of ancient western Asian and European civilisations that the footed dishes, with long stems were used as offering stands. Tall stems have come from almost every burial at kish and a limestone plaque from ~~the~~<sup>it</sup> represents a priest pouring libations into a stand before a seated god. These are weighty suggestions as regards the ritualistic use of this type of vessel. But in one of the burials at kish in which a mother and a child were found buried yielded two stands of different sizes which may suggest that the use of this type of vessel was not exclusively ritualistic and that it probably served the purpose of an eating vessel also.

The wide range of dishes and bowls with stand in ancient world points out to a common tradition which seems to be religious. Early India had trade relations with Egypt, Mesopotamia and Iran and there had been much interchange of ideas and customs, as a result of which the cultures of these countries developed certain common religious belief and practices.

The dishes-on-stand have been found in varying sizes and shapes. In appearance they resemble the stands from <sup>12</sup> kish. These vessels were made very carefully on wheels. As such long and peculiarly shaped vessels are likely to be twisted



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or wrapped in the process of baking, a small proportion of sand and lime was usually mixed up with the clay. It is very rare that they are found intact because they have been broken by the pressure of earth owing to their shape. These from Harappa and Mohenjodaro are badly damaged and not a single piece was found intact at Nevdatoli. As the stems of this type of vessel are thick they have survived, but the wide open pans and bases are found in fragments.

Dishes-on-stand were made either in two parts as in western Asia (e.g., kish, the stem and the base forming one portion and the pan, the other) or in three as is evident from the post-Harappa chalcolithic cultures (e.g., Ahar, Nevdatoli, Chirand, etc.) The joints of the different parts of the vessel were carefully concealed.<sup>13</sup>

Harrapan dishes-on-stand are coated with a thick red slip which was carefully rubbed down. They are usually decorated with horizontal bands, sometimes with elaborate ornamentation.

The Harappan dishes-on-stand fall under three main groups according to the classification of Marshall.<sup>14</sup> Later further classification was made and in the group of the footed dish with long and plain stems only seven variants<sup>15</sup> were observed. The first group consists of those with squat forms, the second shows long and plain stems and the third has moulded stems. The first category is the most common and it is probably due to their squatness that these vessels are better preserved than those with long stems. They are painted with broad bands of red, but the plain and long stemmed dishes are generally coated with pinkish slip without decoration. The dishes of the third category



## 6.

show elaborate stems. They are coated with a thick red slip. The most distinguishing feature of this variety is a ball-like moulding at the top of the stem. In the opinion of Marshall this ball was intended for preventing the hand from coming into contact with the hot pan. In addition to the above varieties we also find small dishes-on-stand with rough finish which may have been either toys for children or intended for rough use.

The dish-on-stand makes its appearance in Malwa in <sup>16</sup> c. 2000 B.C. in which one may observe the difference between the stand of the Sind type and that of the Malwa type. The stand of the former has comparatively a thinner neck and a broad and flared base. The latter shows a straight stem and the base is not as flared as in the case of the former. The Malwa type of dishes are shallow, with broad, flat rims, and they fall under two main types - (1) those with straight or slightly inturned sides and (2) those with slightly <sup>17</sup> out-turned sides. A thick dark red slip is applied to them and they are painted with geometrical and animal designs. The decoration is rich and sometimes extends over the whole surface of the dish. Many dishes and pedestals bear various degrees of corrosion.

The dish-on-stand is distinctive at Ahar (c 1800-1200 B.C.) both in the stone ware like pottery as well as in the <sup>18</sup> Black-on-Red Ware. Only fragments of dishes with slightly inturned rim and cut or grooved below the rim and stems were found in the levels of the stone-ware like pottery. Dish-on-stand and simple dishes are the only types in the stone ware like pottery and they continue in the succeeding painted Black-on-Red Ware. The dish-on-stand of this ware has a broad base as in many other earlier



vessels of similar shape, but difference lies mainly in fabric. The connecting stem is generally hollow at Ahar (Period I c)

In eastern India also the dish-on-stand appears in about the second millennium B.C. at Chirand in Bihar where stems, bases and fragments of pans have been found in large number. A few pieces of the stem which may have been a portion of bowl or dish-on-stand are reported from Pandurajadhibi in West Bengal. The fragments of this vessel from Chirand have been found in the Black-and-Red ware as well as in the associated Red and Black wares. The stems are generally hollow and are either corrugated or plain. Only one stem has been found in the Black ware which shows deep corrugation. The dish-on-stand from Chirand also and one of its speciality is that the border of the base in the Red ware is painted in dots with creamish white colour. It seems that the dish in the Black-and-Red ware was also painted as is evident from a fragment bearing painting.

Thus the dish-on-stand was a significant pottery type associated with the life of the people of the chalcolithic cultures in India.

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" POTTERY OF KAUSAMBI "

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The University of Allahabad has been conducting excavations at the famous site of Kausambi, situated at a distance of 32 miles in the south-westerly direction from Allahabad, since 1949. The main areas excavated are :-

1. Ancient roads, lanes and residential houses of the common people near Asokan pillar situated practically in the centre of the mound enclosed by the defences,
2. Ghositarama Monastery, the abode of Gautama Buddha, situated near the eastern gate of the ancient city,
3. Defences on the eastern side,
4. The palace - Complex at the south-western corner of the city.

Needless to say, the excavations of the above mentioned sectors have thrown ~~the~~ much new light on the various aspects of Ancient Indian history and culture. Our knowledge regarding the evolution of town-life, the growth of urban concept, sculpture, architecture, epigraphy and antiquity of coinage has been considerably enlarged. In the field of religious practices, the excavations have revealed some new facets which were either previously unknown or meagrely known. In the field of ceramic industries, the excavations have contributed substantially to the filling of the gap between Indian proto-history and history. The problem of the so-called Dark-age between the end of the Harappan civilization on the one hand and the advent of Alexander on the other, has been considerably elucidated. The huge mass of pottery from the site falls into ~~the~~ five distinct groups, corresponding to the five cultural periods of the site. Each group presents special features characteristic of its particular period:

Period I (C. 1300 B.C. to C. 1000 B.C.)



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The pottery of period I is predominantly red, (IA) occasionally painted in black pigment. In addition to this, there is a small percentage of sturdy Grey to Buff ware (IB), Coarse Black-and-Red Ware (IC), coarse Black Ware (ID), and Incised ware (IE).

Excepting a few stray examples, the pottery is wheel made, treated with a slip or wash and fired. Within each sub-group, however, the differences exist with regard to the preparation of clay, firing and general finish.

#### IA - Red Ware

The most common ware is wheel-made, sturdy red ware. The slip on the ware varies from bright red to dull brownish red. The well levigated clay besides fine organic material sometimes contains straw, sand and lime particles as binding material. The core is orange red, evidently the result of uniform firing at a high temperature. Though in some thick and large vessels it is blackish. A very small percentage of the ware is painted in black pigment. The painting comprising horizontal, vertical or oblique bands, is mostly executed on the outside generally on the rim, neck and shoulder of the vessels. The important types of this group are shallow, hemispherical and ovaloid bowls, shallow and convex sided dishes, bowls-cum-basins with ridges and prominent grooves, dish-on-stands, goblet, Beakers, shallow basins, and storage vessels both large and medium sized (see Fig..... 1.....)

IB - Grey to Buff Ware - Allied to the sturdy red ware is this group of equally sturdy sherds of grey to Buff ware with a black slip on smooth surface. Only a few types in this group are known but they are common also to Group IA. Some of the sherds in both these sub-groups show clear use of the technique of paring before firing, which is very well illustrated on the stem of the dish-on-stand type (see Fig ...1.....T.. 16.... )

#### IC and ID-Coarse Black-and-Red and Black wares :-

The remaining sub-important groups of this period consist of



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sherds, mostly shapeless and in very fragmentary condition, of a coarse Black-and-Red and Black Wares. As compared to Sub- Group IA and IB, the clay is extremely coarse, with a larger quantity of rough organic material and very small pieces of stone used as degreasant, leaving rugged texture full of small cavities. The pottery seems to have been turned on a slow wheel and fired in an inverted position at a low temperature. There are traces of black slip on some of the sherds. The pottery of this group, though contemporary to that of sub-Groups IA and IB, seems to represent a different ceramic tradition. Some of the sherds are painted in white pigment on a black slipped surface.

Thus, we have seen above the pottery assemblage of Period I of Kausāmbī is very fragmentary and extremely worn out. A considerable number of pottery types of this period had a wide distribution in the Vindhya plateau and western India, such as at Navdatoli (periods III), Rangpur (IIB, IIC and III), Lothal (IIB), Mehagaon, Somanath, Motamachiala etc.

#### Period II (C. 1000 B.C. to C. 900 B.C.)

The pottery from the later layers of Period I of the Defences<sup>6</sup> and almost the entire material from the earlier layers of the palace complex and Ghoshitarama monastery, constitute a distinct group which compare well with the similar types of Ātiranjikhara and other chalcolithic sites of central and western India and is superior in the preparation of clay, firing and finish to the pottery assemblage of period I. The entire material of this assemblage can, however, be divided into the following groups:

IIA - Red Ware - The ware is well fired, turned on a fast wheel and is treated with a bright micaceous ochreous slip on both the sides. Some of the vessels are painted in dark black or white pigment. The painted designs consist of horizontal, vertical bands with varying thickness and pellets enclosed within horizontal bands (see Pl. 1.1....).



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In some cases, the painting is confined to the rim and neck portions of the external surface only while in other the whole of the external surface seems to have been painted. There are a few cases in which the painting is executed on the inner surface as well. The ware is represented by bowls, dishes, bowl-on-stands, dish-on-stands, basins, rimless and neckless vessels, large and medium-sized storage vessels, carinated cooking vessels.

IIB - Black-and-Red Ware - The ware, though produced on the principle of the "inverted firing" is superior in the preparation of clay, firing and general finish to its corresponding ware of period I (Sub-Group IC) which still survives in this period. It is represented by bowls, dishes, and small vases (See fig.. 4.....)

IIC - Incised ware - Some of the sherds of red and black wares bear incised designs (see Pl. ... II.....) consisting of wavy lines, triangles, zigzags, concentric circles, and inverted loops mostly flanked by horizontal lines or grooves.

Many of the pottery types of period I and II are widely distributed in central India, western India, Deccan and Gangetic valley always in the chalcolithic context. The sites which have yielded analogous types are : Navdatoli (Pd III), Nagda (Pd I), Rojdi (Pd IA-IC), Bhagatrava (Pd I), Hasanpur, Mehgoan (Pd I), Amra, Savalda, Chandoli, Bahal, Gilund, Ahar, Lothal, Rangpur (Pd II B-C and III) Prabhash, Atkota, Maski (Pd I), Brahmigiri (Pd I), Bara (Pd TB) Alamgirpur (Pd I), Atranjikhhera (Pds I and II) Bahdarabad, Kakoria and Soanpur (Pd I). It is interesting to note that in western India the comparable types occur in a late harappan or immediately post-harappan context and their Harappan parentage is undoubted. In the gangetic valley, the most noteworthy sites yielding some of the analogous types are Atranjikhhera (in Etah dist) and Kakoria, a chalcolithic-megalithic site on the Chandraprabha (in Varanasi dist). There are about 15 types



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of Kausambi Pd I and II which compare well with their counterparts of Atranjikhhera I. both in shape and fabric. Kakoria, a chalcolithic-megalithic site on Chandraprabha river in Varanasi district also shares many analogous types with Kausambi period I (eleven types) and Kausambi period II and III (seventy five types). Here in this context, it is interesting to note that the site of Kakoria has not yielded even a single piece of iron after two years' dig. The characteristic wares (Fainted grey and N.B.F. wares) of the early historical period of the Ganga valley, are conspicuous by their absence here. The pottery assemblage of the comprises of red ware, black-and-red ware and black slipped grey ware. Bulk of the pottery types of the site compare well with those represented at late Harappan and most harappan sites. The site has yielded microliths consisting of blades, parallel sided and blunted back, points and some flakes and cores indicating the use of the famous crested ridge technique.

As in the case of shapes so in the case of painting and incised patterns, some of the painted pieces resemble very much in fabric as well as in painted motifs, their counterparts from Navdatoli III, Eran I, Rangpur IIA - III and Alamgirpur I, etc. The incised designs from Kausambi are also represented either in incisions or in paintings at the sites like Lothal B, Prabhasa IB, RGF IIB and III, Bara I Alamgirpur I, Rojdi I, Gilund I, Ahar I, Brahmagiri I, Bahal I, Chandoli I, everywhere in the chalcolithic levels.

Thus the early pottery of Kausambi of period I and II shares many types as well as painted and incised motifs with some of the late Harappan and post-Harappan sites of western India, Central India, Deccan and Gangetic Valley. This points to its early antiquity and origin. A link with the chalcolithic culture complex and with Harappan traditions seems to be ultimately indicated.



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A comparative chart, showing the presence of some of the pottery types of period I and II of Kausambi at some of the chalcolithic sites, is attached herewith.

Period III - (9th to 6th Cen. B.C.)

Period III of Kausambi is characterised by the occurrence of the typical Painted Grey Ware ( Sub-Group IIIA) and its other associated wares i.e. Black Slipped Grey ware (Sub-Group IIIB), Plain Grey Ware (Sub-Group IIIC), Black- and red ware (Sub-Group IIID) and Red Ware (Sub-Group IIIE).

#### IIIA - Painted Grey Ware :

The most distinct of all the wares of the period under review is the well known painted Grey ware (Pl. III..) which constitutes a homogeneous group represented mainly by bowls and dishes with thin section, of well levigated clay, and with fine fabric. On the Grey and sometimes light brownish-black slipped surface are painted designs consisting of simple horizontal bands usually on the rim or on the body. Besides, the motifs also comprise groups of vertical or oblique bands or strokes, circles, loops on the body.

#### IIIB - Black Slipped Grey Ware :-

On the ground of the statistical analysis of the pottery assemblage of the period under review, it can be safely said that the black slipped Grey Ware occupies second position after the utilitarian red ware. The ware is carefully turned on a fast wheel, treated with a smooth black slip and possibly also burnished (Fig. 5.... T. 5.T.7.) Although dissimilar in fabric, finish and firing from the well known Northern Black Polished Ware, its occurrence in the painted Grey ware strata does present a stage when people were experimenting with the production of polished black ware. Its body is pervious and does not bear so much of lustre as the well known N.B.F. ware. The ware is



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represented mainly by bowls and dishes. The ware is also reported from the P.G.W. levels at Hastinapura,<sup>7</sup> Atranjikhara (Pd II and III), Kakoria on river Chandraprabha etc.

IIIC - Plain Grey Ware :-

Of this ware the form and fabric are the same as those of the painted Grey ware and need no repetition.

IIID - Black-and-Red Ware :-

The ware is almost similar to the corresponding ware of period II and needs no repetition here.

IIIE - Red Ware :-

A fair majority of the red ware is of medium to coarse fabric. Some of the pots (large and medium sized storage jars) are hand-made only to a modified degree since the rims thereof are invariably wheel made. At the luting points dabber-marks are prominently seen. Husk and mica seem to be frequently employed as degreassants.

In contradiction to the above red ware, the bright slipped ware in this variety has a consistently smooth well levigated clay and is also better burnt like the plain and black painted Grey wares of the period.

The red ware is generally represented by bowls, dishes, basins, large and medium sized vases, bowls-cum-vase with everted rim and small vases. Some of the types of the bright red slipped ware occur in Grey ware as well.

The excavations at the different localities of the site have demonstrated the continued occurrence of the P.G. Ware and some of the types of the other wares associated with this ware, in the early level of N.B.F. ware (Kausambi pd. IV) as well. Thus we find no gap between the end of P.G. ware and the beginning of the N.B.F. Ware.

The comparative study of the pottery types and painted and incised designs from Kausambi on the one hand, to those from typical painted grey ware sites, viz. Hastinapur, Rugar, Ahichchhatra, Atranjikhara and others



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of western Uttar Pradesh and Punjab, on the other, has brought into focus the following characteristic features of the pottery of this period :

- (I) The non-painted grey wares (the Plain Grey, Black-and-Red, Black Slipped Grey and Red Wares) of this period have almost identity at the sites of Atranjikhhera, Hastinapur, Ahichchhatra, Rupar, etc. (Fig.5)
- (II) Though at the sites of Atranjikhhera, Hastinapur, Rupar etc. the painted Grey ware is very rich industry, at the site of Kausambi, it appears to be an effete one.
- (III) It appears that the painted grey ware represents a super imposition on a non-painted grey ware pottery assemblage in the central Ganga valley.

#### Period IV (C. 600 B.C. to C. 1st C. B.C. )

The pottery of this period includes the well known Northern Black Polished ware (Sub-Group IVA) and other associated wares viz. - thick plain Grey ware, (Sub-Group IVB) Black slipped Grey ware (Sub-Group IVC), Red Ware (Sub-Group IVD), and black-and-red ware (Sub Group IVE)

#### IVA - Northern Black Polished Ware

This is most common and distinct ware of the period. The excavations at Kausambi have brought to light sherds of this ware in various shades such as black, steel Grey lustrous blue, orange, tan chocolate, brown, drab, pink, buff, cream, silvery and golden. Instances where double-colour has been achieved are not wanting. This ware, invariably potted on a fast wheel, is usually thin, light and has a striking polished surface having almost a lustrous metallic finish. The paste is consistently fine and well levigated, free of all sorts of impurities. The core varies from Grey to reddish grey. The results<sup>8</sup> of analysis of the slip and other details are now well known.

Some of the earliest specimens of the ware, are painted with bands, CC-0. In Public Domain. UP State Museum, Hazratganj. Lucknow



strokes, dots, concentric and inter-secting circles, semicircles, arches loops wavy lines and other complex motifs in black or in cream, in blue, mostly on tan, dark brown, drab orange and dark grey surface (Pl-IV).

The continued occurrence of the P.G. Ware in the earliest level of N.B.P. ware and the occasional similarity in the painted motifs of the two show an unmistakable influence of the painting traditions of the former on the latter. It is however, to be noted that the earliest evidence of lustrous polish is not furnished by the bowls and dishes which this ware shares with the P.G. Ware. The lustrous polish appears first on the external surface of the vases and thick stems of stands of red ware.

A few sherds bear on the inside of the base stamped designs comprising circles, ring of dots, wheel with spokes and taurines.

The ware is represented by bowls, dishes, basins, with collared rim, basins with spout, lids, carinated handis, globular vessels, small, miniature and medium sized vases and surkhis (spouted vessels).

The first occupational deposit of the N.B.P. ware shows the ceramic in full-nature form. Most of the types of this ware belong to early level and a few to the mid and the late levels. Similarly all the shades of colours mentioned above were present in the early level of the period. A considerable number of shapes of this ware is presented in the associated grey ware and red ware.

#### IVB - Plain Grey Ware :

The ware is usually of medium fabrics, has a thicker section and comparatively rougher surface than that obtained in the P.G. Ware of period III. The clay is definitely of poorer variety as compared to the N.B.P. ware. It is interesting to note that painting tradition of period II still continues in a degenerate form in period IV. Bowls and dishes of this ware bear on the interior of the base stamped designs comprising raised concentric bands or grooves, stylised rosettes. The types met with in this ware are bowls, dishes, basins, lids, carinated vessels, vases, stands and spouted vessels.



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Some of the types of this ware are common to N.B.P., and red wares also.

IVC - Black Slipped Grey Ware :

It shares almost all the features of thick grey ware described above and need no repetition. The only marked difference is a film of dark black slip.

IIID - Red Ware :

Red ware associated with the N.B.P. ware is mostly of medium fabric containing sands- particles, husk and straw in the paste. The clay used is not well prepared. Due to presence of organic matter in the paste, the core often shows small cavities and fissures. It is usually treated with a red slip which is ochreous in composition.

This ware is characterised by a wide range of shapes which are strictly utilitarian such as cooking vessels, drinking vessels, water-vessels, storage jars, and pots for covering purposes. With regard to the shapes, the following types have been recorded in this ware :

Bowls, dishes, shallow plates or baking pans, lids-dish-shaped, bowl-shaped or basin-shaped, tumblers, stands, handis, vases, storage jars, spouted vase (surahis) and ladles. Like its more prominent industry, the N.B.P. ware a larger number of types of this ware originate in the early level of the period. Some of the types of this ware which originate in the last phase of period IV, also survive in the succeeding period V.

In contradiction to the red ware described above, a few sherds of red ware have a consistently smooth paste and also better burnt and smooth surfaces are treated with a bright red slip.

IVD - Black-and-red ware :

Though produced by the method of inverted firing, form, fabric and texture of this ware are the same as those of the common coarse red ware described above and needs no repetition.

Decorated Sherds :

A few sherds of red ware, black-and red ware and N.B.P. ware, have been found with incised, impressed and applique designs. Main object



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also. of the execution of these designs seems to be decorative as is well evident by their appearance primarily on the exterior and that too above the belly, principally on the shoulder, neck or on the rim. The incisions on the interior are confined only to the inside of the rims of everted or flaring rimmed vessels so that the designs could be seen. These designs are executed by a sharp or pointed instruments before the pot was treated with a slip or wash.

The incised designs consists of rows of punctured dots, strokes, triangles, (drawn irregularly) circles, chevrons, criss-cross, wavy lines, horizontal, vertical or oblique bands, latticed designs (simple and diagonally drawn) and semi-circles (See Pls. V.VI. VII.).

#### Graffiti :

The excavations in the different sectors of the site have brought to light a number of sherds with graffiti marks. The symbols on these sherds are more than forty-five in number. It is to be noted that no symbol is restricted to any particular ware or pottery types of the period. They occur frequently on all the principal wares. Thus we find that one and the same symbol occurs on more than one pottery ceramics. Sometimes it happens so that one pot bears four or five symbols or one and the same symbol is repeated twice, thrice or more times on it. A few symbols are found in inverted position on some of the vessels, which can be explained by the way in which the pot was handled at the time of the scratching of the symbol. In other cases the symbols are placed horizontally or obliquely which can also be explained in the same manner.

The symbols are mostly post firing though pre-firing examples are not lacking. Nothing definite can be said regarding the significance and meaning of the symbols in the present stage of our knowledge.

Some of the symbols (taurine, crescent and tree) also appear



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on early Indian coinage specially on uninscribed cast and punch-marked coins. The symbols mostly consist of signs of cross, plus, multiplication, trident bow and arrow, taurine, parallel vertical lines, triangles, circles, squares, and a few early Brahmi signs (Pls. VIII-IX.)

The study<sup>9</sup> of pottery from Kausambi periods IV and V has furnished some very interesting and new data that throw light on the connection between India and Soviet Central Asia in Ancient times. Among such common shapes, mention may be made of conical cylindrical bowls of different sizes (see Pl. x.....) carinated bowls with decorated rim and concave neck, carinated convex sided bowls with featureless rim, carinated bowls with rounded rim and incurved sides. These types have very wide distribution in Russian Central Asian Republics, Viz- Khorezm<sup>10</sup> Sogdiana,<sup>11</sup> Margiana,<sup>12</sup> Northern Bactria,<sup>13</sup> Southern Bactria,<sup>14</sup> and Seistan<sup>15</sup> (Iran). In Khorezm, the principal sites are : Koi-Kulgankala, Dingilge, Bazarkala, Kiyseilgir. The important site in Sogdiana is Afrasiab, Yazdepe, Ansu and Marv in Margiana, Kalai - 1 - Mir, Munchaktepe and Bulkha in Northern Bactria, and Dahani - Gul and Nad-i-Ali in Seistan (Iran). In this connection it is significant to note that the types mentioned above have been obtained from the Achemenid levels between 6th Cen. B.C. to 4th Cen. B.C.

To the 2nd and 1st cen. B.C. belong a large number of stamped floral designs from Kausambi, such as small sherd of coarse red ware decorated with stamped leaf on the outer surface, sherd of a coarse slipped red ware with stamped leaf design decorating the outer surface and another sherd of red ware with wavy lines enclosed by three concentric circles on the top and two concentric circles below. (Pl. XI)

Similar stamped designs have also been reported from the sites e.g. Koikubadshah (south Tadazikistan)<sup>16</sup> belonging to 3rd cen. B.C. and 1st Cen. A.D. Similar stamped designs also occur at Zartepe



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(North Bactria ), 1st Cen. A.D.

On the basis of the above discussion, thus, it became clear that the ceramic Industry of Kausambi, throws a flood of light on the long and uninterrupted life of the famous city. Besides, it also solves many a problem of the so called the Dark-Age of the Ganga Valley and fills the gap between protohistory and history to a great extent as has been pointed out earlier. The ceramic assemblage also indicates that the site did not live the life of grand isolation in different epochs of its long and eventful history. The broken sherds go a long way to tell the association of the site either physical or cultural or both with a number of people who lived in different regions but who had come into contact with the city of Kausambi either as conquerors or traders or messenger or converts to new faith.

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### Introduction:

Recent archaeological excavations and explorations carried out in northern India have presented numerous new facts and details about the distribution, form and chronology of Harappa culture, but before I discuss the nature of the Harappan pottery in Sutlej valley and assess its importance in furtherance of our knowledge, I would like to briefly put it in the broader perspective of the Harappan civilization as revealed in the excavations at Harappa, Mohenjo-daro, Chan-hu-daro; Lothal and Kalibangan. There after an attempt will be made to analyse the Harappan wares of the Sutlej valley in their comparative stratigraphic perspective.

The civilization of Harappa is known from its type site Harappa in Saiwal District of West Pakistan, but nothing is known about the makers of ~~the~~ this great civilization which was of astonishing extent from Dher Majra in the north to Malwan<sup>3</sup> on the south bank of Tapti estuary in the south and from Sutka-gen-dor<sup>4</sup> on Makran coast in the west to Manpur in Ganga-Yamuna doab in the east. A few traits of Harappan culture seem to have been borrowed from Kot-Dijians<sup>5</sup> and other pre-Harappan peripheral cultures present in Central Baluchistan and in northern Rajasthan<sup>6</sup>. It cannot ~~be~~ also be ruled out that Harappa civilization was born possibly due to a combination of technological advances plus as even more important revolution in the socio-political organizational technique of those people<sup>7</sup>.

The salient features of Harappa civilization are systematic lay out of the cities, well-regulated drainage system, use of standard sized burnt bricks, steatite seals ~~xxx~~ depicting the animal kingdom with pictographic or ideographic script, animals and human terracotta figurines, terracotta



cakes, chert blades and weights and bronze objects. The Harappan pottery is characterized by a well-burnt black painted red ware with distinctive shapes like dish-on-stand, cylindrical vase, perforated jar, goblet, big storage jar etc. The general motifs on the pottery are interesting circles, leaf and fish-scale patterns and human and animal figurines.

A maximum time-bracket C. 2500-1500 B.C. was proposed for this civilization but radio-carbon dates from different sites provide a shorter bracket like C. 2300-1750 B.C.

After the end of the Harappa civilization, the organized planning which was the key note of this culture, was entirely forgotten. The reasons for this sudden change must be very weighty but they have yet eluded the archaeologists.

The tract between Ludhiana and Saharanpur, about 274 metres above sea-level, forms the present watershed which divides the drainage of the Gangetic system from that of the Indus system, but there are evidences to prove that some interchange took place between the easterly affluents of the Indus and the westerly tributaries of the Yamuna by minor shifting of the watershed. It appears that in earlier times the courses of the Punjab rivers were very different from what they are now.

The river Sutlej about 1440 kms. long leaves the Dhauladhar Range near Rampur and traverses the foot-hills of Siwalik before reaching Rupar. It joins Beas at Hari Ke Patan and then meets Indus near Mithankot. But there is evidence that in ancient times it passed by Malaut and Abhar (District Ferozepur) and joined the ancient Saraswati near Phulra, now known as Fort Abbas and then the combined rivers passed through the middle of Bahawalpur District, where it is known as Hakra or Wahind and discharged its water through the channel of the Eastern Nara into the Rann of Kutch. The river Beas also did not meet the Sutlej at Hari Ke Patan as it does now. The ancient course of this river can still be traced near



Patti, Kasur, Chunian and Dipalpur through Lahore and Montgomery (Now Saiwal) Districts, now both in Pakistan, where it originally used to join the Chenab near <sup>11</sup> Sindhuhahad.

The rivers of the Punjab have been depositing enormous quantity of silt brought by them from the mountains and this ~~mechanical~~ mechanical-process is responsible for the raising their beds to the level of surrounding plain, and consequent <sup>12</sup> shift-ing of their channels. In the case of Indus system of rivers they have a tendency ~~x~~ to shift their courses towards west. Suggestions have been made that it may be connected with the rotation of the earth but the similar phenomena has not been <sup>13</sup> observed in the case of all rivers in northern India.

Daya Ram Sahani explored Harappa on the bank of an ancient bed of the Ravi in 1921 and thereafter two more sites <sup>14</sup> Chak Purbane Syal and Kotla Nihang were added by M.S. Vats, but after the partition of the country in 1947, the archaeological activities were intensified in East Punjab. Y.D. Sharma, Olaf Pruefer, B.B.Lal, R.P.Das, M.N.Deshpande, Chandigarh University and the author explored a few Harappan settlements on the river Sutlej and its tributaries (Map. 1). <sup>15</sup>

The excavations at Kotla Nihang Khan, near Rupar in Sutlej, valley revealed goblet with painted base, jar-stand, dish, trough, dish-on-stand, handle of a cup and handi-shaped vessel with incised chevron at the shoulder. Triangular and round terracotta cakes were also noticed.

<sup>16</sup> At Rupar, 122 kms. from Ambala just on a thin deposit of sand and pebbles, a late stage of mature Harappa culture with certain new types like dish-on-stand with drooping rim, vases with beaked and under-cut rim, shallow basin, perforated jar, cylindrical-beaker, cups etc. were noticed, whereas the original types ~~recovered~~ in the excavations at Harappa and Mahenjodaro started vanishing. The deposit of upper levels ~~x~~ is characterized by a new ceramic tradition. The Indus goblet



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with pointed base is absent but a class of incised designs, noticed in profusion at Bara, begin to appear at this place. The presence of terracotta cakes is also negligible.

These early settlements have been noticed at several places in upper Sutlej valley.<sup>17</sup>

The excavations carried out at Dher Majra, 11 kms. north of Rupar, yielded pottery identical with cemetery-H at Harappa, besides the Harappan wares in the lowest level. Mention may be made about an incised sherd having decoration on the interior (Pruefer, Excavations at Dher Majra, Type 42).<sup>18</sup>

The pottery from Bara, 8 kms. from Rupar requires a close scrutiny as the site has played an important role in forging connections with other post-Harappan sites in Indus valley on the one hand and Gangetic valley on the other. The excavations revealed an occupational thickness of about 4.5 meters. A few important types of Bara with their paintings and incised decorations on a red sturdy fabric are mentioned here:-<sup>19</sup>

#### Pottery Types:

1. Narrow-necked jar with a splayed out rim, bulbous body and rounded base (displayed in Antiquity section, Safdarjung, New Delhi).
2. Small jars of different sizes and shapes.
3. Dish-on-stand with short stem.
4. Basin with a flat projected and under-cut rim.
5. Hollow lid with a central knob.
6. Dish with a projected and out-turned rim forming a groove.
7. Miniature dish-on-stand.
8. Goblet with a button base.
9. Large storage jar and cooking vessels with a cated surface below the body.

#### Painted Designs:

1. Jar with neck fully painted and also having a single or a set of parallel horizontal bands on the shoulders and belly.
2. Design appearing like a trident on the shoulder of the pot.
3. Fish like patterns with vertical hatching.
4. Leaf patterns (not harappan pipal leaves).
5. Sigma, wavy lines, criss-cross and triangles all having hatching.
6. Looped-arm with horizontal off-shoots on the outer side of the loop.
7. Designs with ~~boldly~~ boldly drawn curving lines.
8. Design consisting of a square with incomplete circles at the corners filled up with hatching (or bastion design).



Incised Decoration:

1. Wavy lines, sometimes single otherwise in a set of two or three.
2. Parallel horizontal lines closely knit sometimes numbering up to 15 but generally intercepted by a set of oblique lines forming compartments or by a single or multiple wavy lines probably by a comb like instrument.
3. Sometimes the parallel horizontal bands are represented in two sets and the intermediate space is filled up with deeply cut-chevronns or lozenges or wavy lines enclosed in lenticular ~~circles~~ circlets.

The incised designs are generally confined on the shoulders of the large vases and below the belly the pot being usually rusticated.

The incised pottery is further reported from Harripur on Rattanadi, about 7 kms. from Badi towards Nalagarh. The types reported are dish-on-stand, beaker, large storage jar and basin with projected rim. The sherds which have tendency to rub off easily are having incised horizontal or wavy lines

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Shri Das also noticed variants of basin with raised and splayed out rim, dish-on-stand and a few painted and incised sherds from Deheru, Manupur and Kheri Nudh Singh, along a dried up bed of Budhanala, a tributary of Sutlaj. Manupur had yielded in addition a few basins of ochreous fabric.

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Recently Shri Deshpande has picked up incised and painted sherds of Bara type from Mandiala Kalan, situated about 29 kms. south-east of Ludhiana on G.T. Road. A sherd with a crane like bird is interesting. Further west this culture complex has been noticed at Kat-Palon in District Jullunder. In addition to Bara pottery, a few sherds looking like ochre-coloured ware of Ganga Valley were also picked up.

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31 kms. south of Ludhiana on the Ludhiana-Hissar Road, an ancient mound at Rohira, in District Sangrur, was also found to contain this pottery. Here one sherd shows cord-impression on the exterior and wavy lines in a set of four on the interior, whereas the other incised sherd has wavy lines on the exterior. Shri B.K. Thapar is of the opinion that similar design has also been reported from Kalibangan I and also from

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Harappan levels at Nal-Amri.

This Harappan assemblage has been also reported from Raja Sirkap, 3 kms. south of ~~£~~ Faridkot. The types picked up in exploration consist of dish, basin and perforated jar.

A survey of Harappan settlements in Sutlej valley revealed that these sites are definitely later in comparison to the mature phases of the same in Indus and Ghaggar basins but at the same time Bara pottery required careful ~~xxxx~~ reassessment. How, when and wherefrom the new trait of incised decorations penetrated in Sutlej valley is a matter still to be decided, for at the sites like Mohenjodaro Harappa incised pottery was not used and the Harappans living in northern Rajasthan from where they migrated to upper Sutlej basin also had no preference for the incised pottery of their ancestors.

In the words of Dr. Y. D. Sharma, 'the position of Bara is difficult to determine. He says further that 'this pottery shows a ~~£~~ family likeness with the pre-Harappan pottery at Kalibangan. But among points of divergence is its thickness and sturdiness..... Also the source of its incised decoration on cooking and storage-vessels is by no means certain, even though such decoration is not quite absent at Kalibangan. Seemingly, Bara has, therefore, some affinity with the pre-Harappan Kalibangan and although influenced by that tradition appears to be later than Rupa.

A comparison between Bara and other known wares of Indus and Ganga Valleys, therefore, has been attempted.

Comparison of Bara with ~~Harappa~~ Harappa, Cemetery-H & Jhukar Wares-

From:

1. Except the conception of dish-on-stand (also present squatish dish-on-stand in cemetery-H) this culture truly speaking has no Harappan forms.
2. The type I of Bara can be also seen in one of the variants in Cemetery-H deposit (Vats, Harappa, Pl. LX: No. 18 type E and Prufert, Dher Majra No. 23 and 24).



3. The Indus goblets, also reported from Bara, are present only in late phases at Harappa and Mohenjodaro ~~with~~ which itself seems to be an intrusion from outside.
4. The miniature dish-on-stand and hollow lid with central knob of Bara, were also noticed in the upper levels of Mohenjodaro (Mackay, Mohenjodaro Pl. LV No.2 and Pl. LVII No.7).

#### Painted Designs:

1. While comparing the painted Bara motifs with Harappans, hardly any resemblance can be sought. The typical decor of the Harappan pottery seems to be entirely unknown to these people.
2. The full neck painted tradition on Bara pots seem to have been borrowed from cemetery-H (Vats, Harappa, Pl. LVIII b and c No.6 and Jhukar, Mem.Arch.Survey of India No.48 Pl. XVI. No.17).
3. The painted design No.2 of Bara has been compared by Gordon with Cemetery-H (Gordon, Prehistoric background of Indian culture, Fig. 10).
4. Like Bara, & Jhukar also does not contain painted bird or animal decoration (although two animal examples are known from Jhukar), whereas at Harappan sites it was a regular features.
5. The boldly drawn curving lines of Bara have an echo of Jhukar motifs (~~Mackay~~ Mackay, Chanhudaro, pl.XLVIII).

#### Incised + Decoration:

1. The incised decoration has been reported from the pre-Harappan levels at Kalibangan but it was found totally absent from Harappan levels.
2. The fragmentary dishes of Jhukar levels (Mackay, Chanhudaro, pl. XLVIII), all bear incised patterns mostly on the inner sides. These decorations consist of wavy lines, horizontal bands intersected by fish patterns and a set of oblique lines forming triangles. Similar decorative patterns with a slight variation can be also seen on the exterior of Bara pots, not on dishes but on cooking vessels, because on the latter decoration is not possible on the inner side.

#### Comparison between Bara and late Harappan and Ochre-Coloured wares in Western Uttar Pradesh.

A majority of Bara types can be seen in the late Harappan and Ochre-coloured pottery complex of Ganga-Yamuna <sup>27</sup> do ab. This ochre-coloured ware received the first archaeolo- <sup>28</sup> ~~gical~~ <sup>29</sup> gical attention at Hastinapur and Bahadarabad but the planned survey of Ganga valley from 1962 to 1965 revealed at least <sup>30</sup> a dozen sites of this ware and subsequently Ambkheri was put <sup>31</sup> to excavations. This pottery was also noticed at ~~F~~ Atranjikhare <sup>32</sup> and Ahhichhatra, and has been circumstantially associated with <sup>33</sup>



with Gangetic Copper-hoard.

1. The vase with splayed out rim, dish-on-stand with drooping rim, basin, hollow lid with central knob and large storage jars with rusticated surface recovered from the excavations at Ambkheri have parallels at Bara and also at Harappan sites in District Saharanpur.
2. A miniature dish-on-stand reported in exploration from Jhinjhana has a striking similarity with the one found in the excavations at Bara.
3. A few incised designs like signs, chevrons, wavy lines etc. from Atranjikhara have a remote resemblance with the similar patterns at Bara, but the typical compartmented designs of East Punjab are almost absent in western U.P.

#### CONCLUSION:

It is difficult to say when Harappans retired to the foot hills of Siwalik and survived in relative isolation. From Sutlej to Ganga, Harappa culture coalesced into one form as by the movement of the post-Harappan cultures of the Indus valley like cemetery-H and Jhukar etc. Cemetery-H sites being nearer to East Punjab seem to have influenced the settlers of these region more in comparison to Jhukar.

The region between Ludhiana and Saharanpur was the only out-let for the people living in upper Ganga-Yamuna doab to exchange ideas and cultural traits with the people living in the Indus system of rivers. It was not unlikely that this area was the ~~the~~ meeting point of various cultures and emergence of new pottery types and the technique of incised decoration were possibly the out-come of this fusion.

It will not out of place to mention a few lines about the recent excavation at Mitathal<sup>34</sup> in Chautang valley carried out by Shri S. B. Chowdhary of the Chandigarh University. The material culture unearthed revealed three phases of cultural deposit ranging from the late pre-Harappan to late Harappan with six structural periods. The upper phase seems to have connection with Bargaon.<sup>35</sup>

It is just an attempt to explain under what probable strains, Harappa-culture existed in Sutlej valley. An earnest attempt should be made to co-relate the Harappan wares of Sutlej valley with those of Indus valley at one hand and with Ganga valley



on the other by taking a few selected sites in Sutlej valley for horizontal digging.

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( Paper read at the Seminar on Indian Pottery organised by the University of Patna, 1968).



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